

THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Vol. XXXIII

OCTOBER, 1934

No. 10

THE YEAR'S ACHIEVEMENT*

GEORGE L. LE FEVRE, M.D.†

MUSKEGON, MICHIGAN

I esteem it a privilege, not to be lightly regarded, to express my thanks for the honor conferred upon me in making me president of the Michigan State Medical Society. The coöperation I have received from the officers of the association, the council and executive committee has been splendid. The year 1933 will be remembered by everyone, particularly in this state, as the major year of depression aggravated by bank failures which in many instances resulted in real hardship to many of our members. The present year, however, has witnessed a gradual recovery; or have we become reconciled, adjusted to the privations of the depression years? It is times like the past three or four years that try men's souls. However, we have not given in, so that today we look forward to a brighter future.

Our society is first among state medical associations to attempt solution of the economic and social problems that are confronting medicine today. Three years ago a committee was appointed to undertake the survey of health agencies of this state. Their work has been thoroughly performed, as has been seen in the extensive and well balanced report which was made to the House of Delegates at the meeting in Grand Rapids last year. This report, complete as it was, is only in a small way evidence of the very extensive and thorough investigation made by the committee up to that time. The most of their work cannot ap-

pear on paper. The recommendations and the report were accepted by the House of Delegates, except the clause referring to the health insurance. It was thought at the time that conditions did not warrant that the society commit itself to any definite proposition of health insurance until further study and investigation had been undertaken. The committee was dismissed and a new committee on medical economics was created. To this committee was appointed the personnel of the older committee, together with additional members. The committee on economics had since been active in the study of the situation and made a report at a special meeting of the House of Delegates held in Flint on April 12th of this year. This report was received and certain steps taken with which all have had an opportunity to familiarize themselves, since a full verbatim report of the special meetings of the House of Delegates was published as a supplement to the May number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY. Numerous persons, philanthropists who have evidently experienced

*President's Address before the 114th annual meeting of the Michigan State Medical Society, Battle Creek, September 12, 1934.

†Dr. George Louis LeFevre is a graduate of Hahnemann Medical College, Chicago, 1891. He did post-graduate work at New York Post-graduate School 1901; Flower Hospital, Surgery 1906; University of Edinburgh, 1911. He is a Fellow of the American College of Surgeons, was president of the Michigan State Board of Registration in Medicine from 1913 to 1929, is past president of the Muskegon County Medical Society, and has been Chief of Staff, Mercy Hospital, Muskegon, twenty years.

a change of heart, have sought means of disposing of their surplus wealth by turning their attention to the affairs of the medical profession. Socialists and so-called social workers have striven to justify their position in the world, and many whose sole aim would be to exploit the medical profession for gain, by changing the old time relations of physician and patient in the guise of caring for the under privileged or so-called indigent, have been vociferous. The time honored traditions of the medical profession have insured that no one suffer from want of medical care since the profession has borne the burden with very little complaint. Had the protest come from physicians in the active practice of their profession, such a movement would at least have had the semblance of logic; but it has come from the sources mentioned.

A wise man will always be prepared for any possible influence that may effect a change in his position, social, economic and otherwise. The medical profession of this state, whatever the state may have in store, will not be caught napping.

In response to a resolution by the Michigan State Medical Society delegation authorized by the special meeting of the House of Delegates at Flint a special committee of the American Medical Association delegates was appointed to study the Michigan recommendations and to define the attitude of the National Association towards mutual Health Service. The report of this committee was published in full in the July number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY and I hope read and studied by every one. Ten points were emphasized, all or most of these points are in agreement with the position adopted by the delegates of the Michigan State Medical Society. The reference committee did not, however, recommend any specific course or so-called plan for the future. The recommendations of the committee were adopted by the House of Delegates of the American Medical Association.

In spite of it all, there is considerable apprehension in several state societies in this country. We have stressed the so-called New Era. Almost every department of human endeavor is being affected. Can medicine escape? I have already mentioned some of the extra professional factors that are at work sowing seeds of discord among

the laity as well as seeds of fear and resentment among the medical profession. It seems within the scope of presidential addresses to discuss the subject, *quo vadis?* Instead of a policy of drift and inaction a policy of planned and sustained action would seem the wiser. Should some form of compulsory state medicine loom in the near future, and who can say that it will not, should not medicine be prepared to meet it? It is believed that the President of the United States favors old age insurance. This is only a brief step to unemployment insurance, which in European countries has included also health insurance. The *New York Times* of May 18, 1934, contained the following significant paragraphs. The speaker was Harry L. Hopkins,* Federal Relief Administrator:

"You aren't going to get health insurance if you expect people to do it voluntarily. I am convinced that by one bold stroke we could carry the American people along not only for health insurance but for unemployment insurance. I think it could be done in the next eighteen months.

"Insurance against sickness is known to appeal deeply to the President, and the recommendation, should he decide to make it this time, will represent ideas he has been working out for several years. He is believed to favor a system based on compulsory contributions by employers for the benefit of their employees by the establishing of 'sickness reserves' as the proposed unemployment insurance provides against periods of industrial depression."

It seems almost a truism to repeat that we have entered an era of comparatively low incomes. Of the population of the United States it is said that half of the total income is received by 10 per cent of the people and for a number of years another 10 per cent have had no income at all; they have depended upon public and private funds for their existence. The basic needs of mankind have been set in the following order: food, clothing, shelter, and medical care. Medicine occupies a peculiar position. In spite of the fact it is a basic need, it comes in after the other basic needs have been met, with as a rule no financial provision made for it. The doctor is usually the sufferer. The traditions of his profession demand that he give his services first, with remuneration as a second consideration. This ethical ideal is not expected of any other of the purveyors of basic needs. They demand payment before delivering the goods. The

*See also H. L. Hopkins, *New York Times*, Sunday edition, August 19, 1934.

doctor is, therefore, the real sufferer, inasmuch as when his fee is not paid, he is hampered in his ability to render medical aid as he should, hampered in his private life and his family is compelled to lead a life of unwarranted retrenchment. And yet the cry for cheaper medical care has originated outside of the medical profession. Whatever inconveniences physicians have experienced, it is only within comparatively recent times that they have taken time off to discuss the economic situation at all.

However, we are confronted with a situation. I have already referred to the ten points adopted by the Committee of References of the House of Delegates of the American Medical Association. In spite of it all, however, continued study of the situation not only by specially constituted committees but by every individual member of the State and National Association is necessary, if medicine is to retrieve the autonomous position it once held. Should the predictions of Mr. Hopkins, Federal Relief Administrator, just quoted, be fulfilled what position will the medical profession be in to meet the situation? Liberty may be purchased only at the price of eternal vigilance.

It is gratifying to note how our membership have welcomed the opportunity to keep abreast with the latest advances in medicine and surgery and allied specialties. Within the past decade postgraduate instruction has become one of the most important subjects that concerns the medical profession, according to a recent editorial in *THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY*. The demand at the beginning of the decade just closed was not great. Those seeking graduate instruction were for the most part physicians who looked to leaving the ranks of general practice to become specialists. The only sources open to them were proprietary postgraduate medical schools which offered courses more or less limited, particularly limited for the graduate student by the magnitude of the tuition charged. Few, comparatively, went abroad to European centers where they were at a certain disadvantage through lack of understanding a foreign language or by listening to a professor who wrestled with broken English.

Undergraduate instruction has always received the major emphasis in this country until now our medical schools are among the

best in the world. Post-graduate medicine, however, has taken on a new impetus during the past six or seven years. It has become a matter which concerns the general practitioner even more than the specialist. The demand for such instruction on the part of the profession at large is steadily growing and the time may not be far distant when we will have numerous adequately endowed institutions for the purpose. According to the 1932 report of the commission on Medical Education in the United States, about 3,500 doctors take resident post-graduate courses in the United States and a thousand go abroad. A little over 4 per cent of the medical profession of this country consider it an important matter to leave their practice for systematic post-graduate study. This does not mean, however, that the majority may not endeavor to keep abreast of medical progress in other ways. New literature, periodic, in the way of medical magazines, and new books or works periodically revised are in great demand; these together with attendance on medical meetings constitute the means of advancement for a large number.

In many instances the demands of medical practice as well as the economic situation render it inconvenient for physicians to leave home without great sacrifice. For such, who are in the majority, the extension post-graduate courses have proved of inestimable value. In Michigan the coöperation of the Michigan State Medical Society and the Department of Post-Graduate Medicine at the University of Michigan is too well known to require more than mention to the profession of this state.

The short intensive courses given jointly by the Department of Post-Graduate Medicine of the University of Michigan and the Michigan State Medical Society have increased in popularity each year so that it has been considered advisable to establish the work at two new centers, namely, Flint and Battle Creek-Kalamazoo. There is no better evidence of good faith on the part of the medical profession than the efforts to keep up to date and thus give the patient the best the science has to offer regardless of price.

Then there is the question of overcrowding of the profession, a matter, however, the regulation of which concerns the medical

colleges and the State Board of Registration in Medicine. During the year 1933, 5,012 persons entered the medical profession through licensure. During the same period 3,500 physicians died, adding to the profession approximately 1,500 persons.

Students of vital statistics maintain that the population of the United States is tending towards stability, since a study of the decade 1920 to 1930 shows an increase of only six-tenths of one per cent a year. It is evident that the medical profession is increasing in number more rapidly than the general population.

According to the latest available statistics there is one licensed physician to every 780 persons in the United States. The proportion in England is one to 1,490; in France one to 1,690; in Sweden one to 2,890. Of course we are living in an age of "overcrowding." No profession or vocation is exempt.

To limit the number of students attending our two Class A Colleges, the University of Michigan Medical School and the Medical Department of Wayne University, would not materially reduce the proportion of physicians to population in this state, for the simple reason that a great many of our graduates go elsewhere to practice and our cities in particular attract large numbers of graduates from Medical Colleges outside the state. The graduates of medical colleges in states with preponderantly rural population leave the state almost as a body for locations elsewhere.

One way of solving the problem would be to copy the plan adopted in Sweden, namely, state regulation, which would not be popular in our kind of democracy. Another plan to mitigate the congestion would be to confine the practice of medicine to doctors who have met the state requirements in pre-medical and medical training and thereby eliminate the culds. However, that would involve political influence which at present does not exist for the medical profession in this state.

An activity of the society that cannot be too strongly stressed is the medical defense feature, under the able secretaryship of Dr. W. J. Stapleton of Detroit. During the depression there has been an increased disposition on the part of unscrupulous patients to obtain easy money by bringing charges of malpractice against physicians who may have attended them. Many of the charges

prove to be little short of attempted blackmail. Here we repeat the admonition that physicians should be very careful about passing judgment on the after-results of other physicians' treatment, particularly if such results are not satisfactory to the patient. It has been said with a great deal of probability that a shrug of the shoulders or some other very unconsequential expression is all that is needed to make a disgruntled patient feel that he was being badly treated. The medical defense afforded by the society may prove worth many times the membership fee to the state society.

The attention of the Medical Society has been drawn to a condition in some communities which might bear investigation. A few hospitals in the State are branching out to the extent that they are competing with the private practitioner, by the establishment of clinics and the solicitation of laboratory and x-ray work. Such a condition, I believe, is best handled through the individual staffs of these hospitals, and, when such conditions exist, the county society, through the staff members, should attempt to cause the necessary changes to be made.

It is for this reason that all of us who are staff members will be serving our profession and our hospital better if they keep in close touch at all times with the management of the hospital. The profession needs the hospitals and the hospitals need the doctors.

It is ever true that there is more unrest economically during a depression than during more normal times and many social changes appear of utmost importance at this time which will be minimized greatly as business speeds up to its usual pace. If these social changes are too hastily adopted, the action may have to be rescinded later. I am quite optimistic about the nation's progress and I believe we will hear less crying for social changes in the very near future.

A few words in commendation of the Women's Auxiliary. Within its comparatively brief history it has become co-extensive with organized medicine. The organization consists of County Units which send delegates to the state auxiliaries and the state has representatives in the National Association. Medical Science is increasing in its appeal to physicians' wives; much as I dislike the word propagandist, our wives

have become valuable disseminators of medical information to their non-medical associates. Their activities vary from the purely social to the intellectual, for the members of one county auxiliary have undertaken a series of lectures on medical history. Sunday afternoon musicals have also been numbered among their activities. I wish to pay my regards to the untiring efforts of Mrs. Whitney, President of our state auxiliary, and her able officers for the activities the past year.

As a state society, we have been extremely fortunate in having had the services of Dr. Fred Warnshuis as secretary for twenty-two years. It has been through his efforts that much of the progress we have made in organization, in post-graduate

work, and many other activities, has been achieved. It is with regret that we are losing him at this critical time, and on behalf of the Society I wish him all the luck possible in his new field.

And now we come to a parting of the ways. You have conferred on me the highest honor that you as an organization can bestow in making me your president. I can assure you I have tried to do my best. I have long been associated with organized medicine in the State, as an officer in my county society, on the council, and now as state president. During this time I have enjoyed the sincere coöperation of the membership, the council, and the officers. For all this I thank you and take my place among the unofficial profession with none but the pleasantest memories.

MEDICAL EDUCATION IN MICHIGAN*

RICHARD R. SMITH, M.D., F.A.C.S.†

GRAND RAPIDS, MICHIGAN

I am deeply appreciative of the very great honor which has been conferred upon me in being chosen as your President. I am well aware, too, that at this critical period in medicine the office carries with it more than the usual amount of work and responsibility and am only hoping that I may fulfill my duties half as well as Dr. Le Fevre has fulfilled his. The direction of the policies of the society and the control of its affairs rest with the House of Delegates. The House merely delegates to the Council, the Executive Committee and other committees the many details existing in an organization of this size and importance. The President is supposed to take part in the ceremonials, to act ex-officio on the Executive Committee, and to be well acquainted with the affairs of the Society and its various problems. I think this a very wise plan of government. With the advantage of a certain detachment he is in a position to appreciate the broader aspect of the problems of the Society rather than details. It has been told to us time and time again in these days when the livelihood of every physician has been a serious problem and economic problems as a whole threaten our very existence as a dignified and honorable profession, that we should hold to fundamentals, and I am thoroughly in accord with this idea. Of one such fundamental I

wish to speak briefly today. We will succeed individually in medicine very much according to our merits, which means, of course, the service which we are able to render the public. I am fully aware that character, hard work, and the ability to inspire confidence in our patients, enter very largely into the success of every physician, but I am also aware that in the long run a man's knowledge of medicine and the ability to apply it is more essential to success than any other one factor. Medical education, therefore, becomes a factor of the first moment, and we have been wise enough in this state to recognize this and provide for it.

I hope this year to speak on several aspects of medical education in Michigan and its institutions, but with the short time al-

*Read on induction into office as President of Michigan State Medical Society, Battle Creek, Michigan, September 12, 1934.

†For professional note see page 569.

lotted me I am going to speak today merely of one important factor in medical education here in the state, namely, the University of Michigan and the part it is taking in under-graduate, graduate, and post-graduate teaching.

The University of Michigan is one of our oldest and most important state institutions. Its purpose is higher education and its attitude entirely constructive and unselfish. It is thoroughly interwoven in the social and economic fabric of the state and essential to its well being. It fits men for a better enjoyment of life, makes for sounder public opinion, and furnishes a large number of our professional men, without which we could not exist. It belongs to the people of Michigan and is one of our most cherished and proudest possessions. Since health is of prime importance it has lavished an immense amount of thought and effort on Medical education. The Medical School at Ann Arbor was opened in 1850. A candidate for a degree was required to attend two courses of lectures of six months each, and to have spent one year with a practitioner—a so-called preceptor. In 1877 the curriculum was extended to two years of nine months each, and in 1880 three years of study became necessary before a candidate could present himself for final examination. In 1890, the compulsory term of study was extended to four years, allowing a better gradation of the curriculum and the extension of laboratory teaching. Since that time there has been a gradual and marked improvement in teaching and teaching methods. Of equal importance have been the increased requirements for admission. In 1890, a combined curriculum in Letters and Medicine was provided and graduate courses were offered. In 1909, the requirements for admission were advanced to a minimum requirement of two years of collegiate study, and step by step to a present-day requirement of ninety hours, or practically three years of such pre-medical work. It includes Chemistry, Physics, Botany, Psychology, Zoölogy, German and French, English Literature, and other cultural subjects. This pre-medical work is of infinite value in establishing a broader, better foundation for the study of medicine with all it means to its better understanding of medicine, and enjoyment of its privileges.

The University in its graduate school pro-

vides for the continuation of medical study by graduates in Medicine. Those availing themselves of these opportunities are those that desire to become, perhaps, research workers or teachers, or to pursue one of the specialties in medicine. The main object of the Medical School, however, is to train men for practice in the field that they may render better service to the 5,043,000 inhabitants of Michigan. To be sure, all physicians graduating from the University do not practice in Michigan, and the work in the field is performed also by many who come from other centers of learning. According to the Directory of the American Medical Association (1934) we have in Michigan 5,678 physicians. Of these, 1,661 (about 29 per cent) are graduates of the University of Michigan Medical School [1,522 (about 27 per cent) of the regular school, and 139 (about 2 per cent) of the homeopathic school]. Of the 5,678 physicians in Michigan, 3,218 (about 60 per cent) are members of the State Society. Of these, 1,016 (about 31 per cent) are graduates of the University of Michigan [940 (about 30 per cent) of the regular school and 76 (about 1 per cent) of the homeopathic school]. The School of Homeopathy is not now in existence. The graduates of the University of Michigan determine, in no small degree, the standard of services rendered the people. The merit of the service rendered the public determines mainly our position with the people, and the respect accorded us. A high standard of medical education is the strongest bulwark we have against all forms of irregular practice and whatever the economic conditions of the future, and whatever the legislation, we may have little fear as long as a high standard of medical education is kept ever in the foreground.

Soon after the war a new era in medical education began in Michigan. It came about through a keener realization by the profession of the necessity for post-graduate study. The movement was headed by this Society. Meetings, conferences, and clinics were inaugurated, directed to give opportunity mainly to the general practitioner. In time it became apparent that we had need of our medical schools in this program. In 1926 the new hospital at Ann Arbor was opened. In January, 1926, Dr. Jackson, Chairman of the Council, invited the faculties of the University Medical School and

of the Detroit College of Medicine to discuss post-graduate medicine at the annual meeting of the Council. A committee was formed and a year later rendered a report reviewing conditions in the state and the desirability of furnishing a comprehensive program of post-graduate education. As a consequence, a department of post-graduate medicine was established at Ann Arbor with the understanding that the Detroit College of Medicine, and the State Society cooperate in the enterprise. Dr. James D. Bruce was made head of the department where he now serves. He has coordinated the work of the three organizations with astonishing efficiency and harmony. Post-graduate teaching was begun in Detroit and later at Ann Arbor. The growth of attendance demonstrates that we are on the right track. At Ann Arbor in 1928-1929 the registrations were forty-seven; the last year 277.

It has been shown by elaborate studies that a practitioner needs a complete renewal of his medical education once in five years if he is to continue to deliver an adequate quality of service. At present it is believed that this can be best attained by short intensive courses covering eight different general fields of interest to the practitioner and is designed with the thought of minimum loss of time and expense to him.

It was recognized early in the work that

there were many men in the state perfectly capable of teaching. There are sixty of these now enrolled as extra-mural lecturers in the Department of Post-Graduate Medicine of the University of Michigan Medical School.

Lastly, centers of teaching have been established at Flint, Grand Rapids, and Kalamazoo-Battle Creek. These centers will open easily available opportunities to a large number of practitioners. One may easily visualize the time when every practitioner will, as a matter of course, avail himself of these opportunities for post-graduate study and keep well abreast of his times. It will add tremendously to his usefulness, his position in the community, and his enjoyment of his work and life.

I would call your attention to the elaborate report of the committee on Post-Graduate Medical Education and the needs of the general practitioner. Dr. Jennings, as chairman, and Drs. Davis and McClure composed this committee. It is by far the most comprehensive and splendid study ever made of the subject. Surely medical men have been brought to a keener realization of the fact that they are engaged in the practice of a science, and that a science requires lifelong intensive study, and that such study must not cease with graduation.

PRIMARY CARCINOMA OF THE BRONCHI

WILLARD D. MAYER, M.D.†

DETROIT, MICHIGAN

Within recent years primary cancer of the bronchus and lung has become a rather common clinical entity, and such cases seem to occur throughout the country in increasing numbers. During the past five years, thirty-five such cases were observed at Harper Hospital, Detroit, Michigan. During this same period of time there were thirty-four cases of metastatic cancer of the lungs. Actually the cases of primary bronchus and lung malignancy exceeded the supposed more common metastatic cancers of the lung by one case. In our series of thirty-four cases, three of them occurred in the year 1928, five in 1929, three in 1930, eleven in 1931 and thirteen in 1932. No doubt one reason for the rather large number of cases seen at this institution is the reference of such patients for deep x-ray therapy. In this series of cases

are two apparent cures, one of which is reported in detail. A study of the symptomatology, physical signs and other clinical features of the disease is of interest and has been thoroughly and carefully presented by Adler¹ in his monograph, McCrae, Funk and Jackson,² also Fried,^{3,4} and this article becomes something of a review of known facts.

†Dr. Willard D. Mayer is a graduate of Jefferson Medical College, Philadelphia, 1912. He was intern and House Physician at Mt. Sinai Hospital, New York City, 1912 to 1916, is Attending Physician, Detroit Receiving Hospital; Assistant Attending Physician, Harper Hospital, and Associate Professor of Clinical Medicine, Wayne University. His specialty is Internal Medicine.

Owing to the varied manifestations of this disease, such cases come not alone to the internist and general practitioner, but to the surgeon, orthopedist, laryngologist, gynecologist, radiologist, etc. The importance of a careful understanding of this condition and of constantly being on the watch for such cases is obvious. In the minds of many, this is considered an extremely rare disease; as a result, many diagnoses are missed or are made at a late stage when no therapeutic aid can be given.

Various etiologic factors have been presented to account for the increase in frequency of this disease. Among the commonly advanced theories are (1) gaseous fumes as from the exhaust of automobiles and factories, (2) road dusts which contain particles of tar and barium, (3) preexisting tuberculosis, (4) increased frequency of influenza in recent years with resulting bronchial irritation, (5) use of tobacco, (6) pneumoconiosis—Adler mentions cancer of the lung occurring in miners working in mines in Schneeberg, Silesia. These ores contain considerable arsenic and radioactive substances and are apparently a definite etiologic factor. A recent editorial in the *Journal of the American Medical Association* has commented upon this fact.³ It is difficult to state which factors may have definite bearing upon the condition.

PATHOLOGY

Osler⁹ has stated that 85 per cent of primary lung cancer arises in the bronchus and the remaining 15 per cent in the lung parenchyma. The bronchial or bronchogenic type arises in the cylindric epithelium or mucous glands of the bronchial mucosa while the parenchymal type arises in the alveoli. The bronchial type often has its origin at the first bifurcation of the main bronchus² and occurs as a small nodular mass which soon ulcerates and may project itself into the lumen of the bronchus, extending down the bronchus or up towards the trachea. It may become papillomatous in nature and movable, thus producing a variety of physical signs. It may invade the lung parenchyma and also extend to the hilus region with lymph node and mediastinal involvement. Parenchymal invasion may be extremely rapid and closely simulate pneumonia. Annular constriction of the bronchus and trachea may occur with re-

sulting asphyxia. Such a case has been reported by Weller.¹¹ The variable growth of the cancer as well as the points of origin accounts for extreme variance in the symptomatology, physical signs and x-ray findings. Further confusion in the diagnosis may be occasioned by such secondary complications as lung abscess, gangrene, atelectasis, bronchiectasis and pleural effusion. Pleural effusion may be due to direct extension to the pleura or pleural irritation. The study of the metastases is important because in some cases the early symptoms will be entirely those of the secondary lesions. This is mentioned by Weller in his excellent article. Metastasis may occur in the osseous system and involve the spine, clavicle, arms, legs, also the brain, liver, kidneys, adrenals and regional lymph nodes, especially those of the cervical region. Biopsy of cervical nodes has often disclosed a correct diagnosis.

The condition occurs more commonly in males and generally past the thirty-fifth year. It is located about equally in both sides; however, there may be some predominance on the right.

SYMPTOMS

The marked variation in symptomatology can be readily understood when one considers the underlying pathology of this disease. Such factors as location of the primary lesion, its size, direction of growth, as to whether it be in the bronchus or pulmonary tissue itself, the degree of malignancy, structures secondarily involved, occurrence of early metastases, ulceration, effusion, secondary lung abscess, gangrene and atelectasis all serve to confuse the clinical picture, bring about a complicated history with unusual symptoms and physical signs.

The onset is usually gradual but often is abrupt and one is inclined to think of an acute bronchitis as such patients usually have chest pains which are localized. Chest pain is a rather constant symptom throughout the entire disease and should be given consideration in arriving at a diagnosis. Cough is another early symptom and it may be mild or severe. Early it is generally unproductive and may be spasmodic and protracted, causing one to think of pertussis in the adult. It may be very annoying and very difficult to check and may be accompanied by some wheezing. This occurred

in one case under our observation in which the cancer was apparently primary in the lung itself. In another case the cough sounded hollow as in aneurysm with recurrent laryngeal nerve involvement. In this same patient hoarseness developed, later marked aphonia occurred. As a rule the cough is unproductive at the onset, or small amounts of clear mucus may be expelled, later the sputum may become purulent and foul if secondary lung abscess or gangrene occur. Hemoptysis generally occurs at some time during the course of the disease; it may be seen early and be profuse or there may be blood streaked mucus. One must mention the occurrence of so-called "current jelly" sputum, which is sputum containing mucus with blood clots and which has been considered diagnostic. However, there is nothing diagnostic about the type of sputum in this disease. Profuse pulmonary hemorrhage is rare; however, this has occurred and at times early in the course of the disease. At this point one must digress to state that unexplained cough and hemoptysis always demand careful and thorough study and in many instances bronchoscopic examination. Fragments of tumor tissue have been expelled and examination of such material has made a diagnosis.² Tubercle bacilli may be found in the sputum as this disease may coexist with lung cancer.

Dyspnea may be present in all degrees of severity and much depends upon the structures involved. In marked bronchial obstructions or atelectasis, it causes terrific distress and suffering. Occasionally dysphagia occurs from esophageal involvement. There is loss of weight and strength, also impaired appetite. Cyanosis often occurs and with the development of pleural effusion or atelectasis the condition may closely simulate cardiac decompensation. Clubbing of the fingers is occasionally seen.

At times the symptoms, at least the early ones, will be entirely due to the metastases, which may be extensive, involve distant structures and the point of origin be in a small localized bronchial lesion.

Mediastinal symptoms are often encountered, such as unequal pupils, unequal radial pulse and blood pressure, dilated chest and arm veins, also edema and congestion of the upper half of the body. Pains in the head, arms, spine, legs may be present due to metastases and greatly obscure the diag-

nosis. Icterus may be present due to liver involvement. Coma from asphyxia is also mentioned.

Fever is generally present after the disease is well established and may be slight as 100 degrees, or higher and of a septic type, particularly in those cases with complicating abscess. However, occasional cases are seen without fever and some writers stress this point in making a differential diagnosis between this condition and tuberculosis.

The cough, with hemoptysis and fever, often brings such cases to the tuberculosis sanitarium with the erroneous diagnosis of tuberculosis. Chills and sweats may further complicate the picture. As can be noted from the above description, there is nothing characteristic in the symptomatology of this disease.

PHYSICAL SIGNS

There is probably greater variation in the physical signs of this disease than in the symptomatology.¹⁰ There are no specific physical signs and it may be said that no two cases are exactly alike. Early in the course of the disease the signs may be nil. Later there may be a small area of dullness corresponding to which there may be diminished breath sounds and vocal fremitus with a few coarse râles, while above and below the involved area there is normal resonance. This is particularly the case when the initial involvement is parenchymal. The involved area may gradually increase in size until ultimately an entire lobe is involved. There may be limited expansion over the affected area.

In those cases of bronchogenic origin, atelectasis often is present and the signs of this condition may be very evident only to disappear later due to the obstruction moving. In this type the neoplasm acts as a ball valve foreign body in the bronchus. Signs of pleural effusion may occur at any time but generally later in the course of the disease and aspiration may disclose hemorrhagic fluid which is of material aid in arriving at a correct diagnosis. Often in making the chest aspiration the needle will meet with the tumor and this gives one the impression of perforating a firm mass. A large amount of serosanguinous fluid will often be removed and in a few days it will quickly reaccumulate. X-rays of the chest

following removal of the fluid will frequently show the tumor mass distinctly, especially if a small amount of air is injected. At times, with characteristic physical signs of fluid present, none will be obtained upon aspiration. In such cases a very large solid tumor is present. Owing to secondary pulmonary changes, the signs of pneumothorax, lung abscess and empyema are often noted.

In certain cases the physical examination will reveal signs chiefly of the metastases as has been previously mentioned.

X-RAY FINDINGS

The x-ray findings are variable and often the shadows are very difficult of interpretation especially in early cases. However, progression of the lesion can often be determined with plates made over several weeks period. The parenchymal type of lung cancer is more evident in its early stages by x-ray examination than the bronchogenic. Lipiodol injections at times have given considerable aid in the x-ray diagnosis. The x-ray is of value also in confirming the clinical diagnosis of metastases.

BRONCHOSCOPY

Bronchoscopic examination constitutes one of the most important steps in arriving at a correct diagnosis. Particularly is this evident if a section of tumor mass can be removed and examined microscopically. The work of Chevalier Jackson and his colleagues has done much to impress upon the medical profession the importance of bronchoscopy in all obscure chest cases.

DIAGNOSIS AND TREATMENT

The diagnosis would be correctly made in a far greater number of cases if this condition was kept in mind. Because of its peculiar manifestations and rarity as compared with many chest conditions, it is not given proper consideration by the medical profession. The importance of a careful history and complete physical examination, x-ray and bronchoscopic findings has been stated. The removal of a metastatic mass or lymph node has made a correct diagnosis in many obscure cases. This condition must be differentiated from pulmonary tuberculosis, aneurysm, Hodgkin's disease, lung abscess, lymphosarcoma, foreign body in the bronchus, echinococcus cyst of the lung, etc. Great care must be used to exclude

aneurysm because of danger of bronchoscopy in such cases.

The prognosis is not good and neither are the results of therapy. However, if an early diagnosis is made and treatment instituted, at times much can be done. For the pedunculated type, bronchoscopic removal with local radium implantation followed by deep x-ray therapy may be followed by a good result. Deep x-ray therapy is in general use; however, as these neoplasms are generally not radiosensitive, cures cannot be expected.⁴ Nevertheless the number of apparent cures is on the increase and everyone who has seen groups of these patients can mention proven cases, whose outlook seemed hopeless, now restored to health and normal activities. Leddy and Vinson⁷ in a recent paper, presented before the American Roentgen Ray Society at Detroit in September, 1932, stated that from their experience, palliative treatment is best accomplished by high voltage therapy. They have had seventy-one proven cases of bronchogenic carcinoma. Twenty-nine of these cases were not treated. Ten of the forty-two patients treated by roentgen ray alone were living from fifteen months to four years after the diagnosis was made.

Case Reports

BRONCHOGENIC CARCINOMA

Case 1.—H. W., white, male, aged thirty-five, occupation merchant. This patient was admitted to Harper Hospital, Detroit, on January 4, 1929, and was discharged on January 9, 1929. On January 2, 1929, he had a chill with general aches and pains over his entire body. He had a temperature of 101 degrees and apparently had influenza. However, he had been coughing considerably and raised a large amount of blood tinged sputum. The temperature and coughing subsided in four days. He continued, however, to have hemoptysis. He stated that in October, 1924, a gastroenterostomy had been performed for duodenal ulcer. About one year later he had his first pulmonary hemorrhage. This has continued at various intervals since and the amount of blood raised is from one teaspoonful to one-half cup. There was no loss in weight, no night sweats, no chest pains, his tonsils had been removed, no gastric symptoms, no tarry stools. Family history is negative. Physical examination revealed a fairly well nourished adult male. Pupils reacted properly to light and accommodation. Tonsils have been removed. Heart was not enlarged, action was regular and there were no murmurs. Blood pressure was 104/70. Lungs: The breath sounds were diminished over the left lung posteriorly in the region of the angle of the scapula. Over this area were heard definite moist râles. The balance of the physical examination was negative.

Laboratory Data:

Blood count: R. B. C., 4,250,000; Hgb., 65 per cent; W. B. C., 10,600; Polys., 86 per cent; Lymph., 15 per cent. Urine examination was negative. Sputum was found negative for tubercle bacillus. N. P. N., 37.5 mgm; blood sugar, 0.095 mgm. Wassermann test was negative.

At that time x-ray examinations showed prominence of trunk marking in the lower left field. The heart was not enlarged and there was no parenchymal infiltration. After five days the temperature became normal and the patient was discharged from the hospital, but was informed that the hemoptysis apparently was not due to his acute illness and that further investigations should be made in order to establish its cause. He was then referred to Dr. Louis H. Clerf, Jefferson Hospital, Philadelphia, Pa., for bronchoscopic examination. The following is the report of the bronchoscopic examination as well as the histologic report of tissue obtained:

Bronchoscopy for Diagnosis (January 19, 1929, by Dr. Louis H. Clerf): "The trachea and the right bronchus appeared practically normal; the orifice of the right upper lobe bronchus seems unusually prominent. The left main bronchus appeared normal; in an internal subdivision of the bronchus of the left lower lobe, there was found a large blood clot. Following removal of this, there was moderate bleeding and it was not deemed advisable to continue with the bronchoscopy. Another bronchoscopy will be done."

Bronchoscopy for Diagnosis (January 21, 1929): "Following the removal of the small quantity of blood in the internal subdivisions of the left lower lobe bronchus, there was found a small mass of tissue suggesting granulation tissue springing from the posterior bronchial wall; it was intensely friable and a small mass was obtained for histologic examination."

Diagnosis: Stenosis of subdivision of left lower lobe bronchus. Inflammatory tissue? Malignant neoplasm? Specimen removed for biopsy.

Histologic Report: "The fragments of tissue are largely composed of inflammatory exudate, including fibrin, leukocytes and granulation tissue. There is a rather marked leukocytic infiltration in the granulation tissue. A few small clumps of epithelium are observed scattered throughout the connective tissue, but evidence of malignancy is not observed. However, the significance of the presence of the epithelial cells in the granulation tissue could not be interpreted due to the fact that the pieces were very small, and no normal structure is observed."

In February, 1929, bronchoscopic examination was repeated by Dr. W. A. Hudson of Detroit, a biopsy was performed and this revealed carcinoma. On May 2, 1929, the patient was bronchoscoped by Dr. Hudson and the left lower secondary bronchus showed definite ulceration. It had the appearance of carcinoma. Radium was inserted by Dr. Hudson. Subsequently Dr. Leucutia administered deep x-ray therapy. On July 6, 1929, this patient was again admitted to Harper Hospital and bronchoscopic examination by Dr. Hudson revealed that the lower stem of the bronchus was normal except for congestion, which is moderate in the region of the lesion as observed on previous occasions. The mucosa has a whitish appearance; the lumen of the bronchus itself is patent; the opening of the tertiary bronchus from which the original tumor was removed was found to be patent and to possess motility that is very close to normal and no evidence of new growth has been seen on this bronchus. At one point a small protrusion is seen. The mucosa over this protrusion is whitish color. Because of this finding radium was again inserted. Deep x-ray treatment was also instituted. This patient is today living and enjoying good health. He has had occasional deep x-ray treatments. Recently he had hemoptysis, and chest x-rays were negative. However, he was bronchoscoped by Dr. W. A. Hudson, who reported as follows (December 3, 1932):

"I saw Mr. H. W. about the middle of November, 1932, at which time I performed a bronchoscopy. It was noted that there was no evidence of the former malignancy but at the site which was occupied by this new growth there now remains an intact mucosa which does contain a number of small fairly prominent vessels. Proximal to the site of the former lesion there was encountered a small blood clot which seemed to be located in a vessel that had previously ruptured. Silver nitrate was applied and the patient was notified of the findings and advised to let us hear from him at regular intervals." On September 8, 1934, this man continues to be in good health.

Case 1 is an example of bronchogenic type of carcinoma seen early, given intensive radium and deep x-ray therapy with thus far an excellent result. The cancer may have arisen in an ulcerated lesion in his bronchus which subsequently became malignant.

BRONCHOGENIC CARCINOMA

Case 2. J. M., white, male, aged forty-eight, occupation—waiter.

In September, 1931, this patient developed a series of colds, had dull aching pains over the right chest anteriorly. He also had a cough productive of thick yellow mucus. He became readily fatigued and had night sweats. He was hospitalized at a hospital in Detroit and was said to have had bronchial pneumonia. Subsequently he was discharged. However, the cough persisted along with weakness, night sweats and loss of weight. In January, 1932, he was hospitalized at another hospital in Detroit and here several chest aspirations were done, also the operation of phrenicectomy. There was no history of hemoptysis. The family and past history were negative. On February 3, 1932, he was admitted to Herman Kiefer Hospital and discharged on February 23, 1932. At this time the left supraclavicular nodes were palpable. Examination of the lungs at that time disclosed impaired resonance over the right upper half of the chest anteriorly with coarse râles and harsh breath sounds. This extended well out into the upper portion of the right axilla. Over this area in the right axilla the breath sounds were diminished. The left chest was normal. On February 4, 1932, x-ray examinations disclosed what was considered an advanced mixed type of tuberculosis involving the upper two-thirds of the right lung with a loculated effusion. February 10 lipiodol injection disclosed a cavity in the upper part of the right lung.

Laboratory Data:

R. B. C., 4,160,000; W. B. C., 6,800; Polys., 80; S. Monos., 2; L. Monos., 17; Trans., 1.
Wassermann test was negative.
N. P. N., 22.2 mgm.; blood sugar, 91 mgm.

The sputum was examined nine times and found negative for tuberculosis. A direct smear from the trachea was made for tuberculosis and a culture of the sputum for tuberculosis was negative.

Bronchoscopic examination was performed by Dr. Hammond (February 4, 1932). A 7 mm. bronchoscope was passed. A suspicious tumor mass in the right main bronchus near the junction of the middle lobe bronchus was visible. Biopsy taken; unable to aspirate any large amount of pus from the right upper lobe and middle lobe bronchus. *Impression:* Carcinoma of the bronchus.

Pathologic Report: In a section is a dense layer of stratified squamous cells, smaller than the usual size and showing degenerative changes. These cells

were not in orderly arrangement and are found infiltrating the deeper portion of the bronchial wall and surrounding the mucus glands. From this zone, palistrades of similar cells extend deeply in the smooth muscle and connecting tissue. From the stratified character of the cells it is assumed that their origin was in the epithelium lining of the bronchus. *Diagnosis:* Advanced carcinoma of the bronchus (Dr. J. A. Kasper).

On March 5, 1932, under local anesthesia an incision was made about the fourth rib in the right axilla and here an abscess cavity was found containing clear, thick mucopurulent material. A block of tissue was removed for microscopic examination by Dr. O. A. Brines at the Detroit Receiving Hospital. This failed to show definite malignancy.

This patient was then sent to Eloise Hospital for deep x-ray therapy and there he expired on April 5, 1932. Consent for autopsy was not obtained.

A brief study of many details in connection with Case 2 should surely impress any observer as to the difficulties in arriving at the diagnosis of cancer of the lung. This patient was first thought to have colds, then broncho-pneumonia, then very careful studies, observation and laboratory examinations were made and a diagnosis of pulmonary tuberculosis was made. This diagnosis was made by very definite x-ray findings, physical signs and clinical observation. It will be noted that numerous attempts were made to confirm the diagnosis of tuberculosis. At that time the question of lung abscess was given great consideration and a phrenicectomy was done. Finally bronchoscopic examination was performed and a positive section obtained. Subsequent operation disclosed a definite lung abscess and excised tissue from the abscess wall failed to reveal the new growth. This case well illustrates the difficulties in diagnosis and the occurrence of lung abscess subsequent or as a sequel to bronchogenic cancer.

PULMONIC TYPE OF CARCINOMA

Case 3. I. G., white, male, aged forty-nine, occupation—builder.

The patient was admitted to Harper Hospital August 8, 1931, and was discharged August 18, 1931. He states that on June 25, 1931, he took a shower bath and following this he developed a cough which persisted. The cough is dry and constant and without expectoration. He has coughed so much that he is unable to sleep and has pains in his throat and chest from constant coughing. The cough is highly suggestive of pertussis. The patient does not give a history of aspirating any foreign body into his trachea. In March, 1931, he had a severe tonsillitis. His past history was negative. He has never used tobacco.

Physical examination revealed a fairly well nourished male who, aside from his constant spasmodic cough, did not appear acutely ill. The eyes reacted normally to light and accommodation. The pharynx was red and injected. There were a few cervical glands palpable. The heart was not enlarged, action

was regular, there were no murmurs. Blood pressure was 110/75. On inspection posteriorly there was some retraction of the right chest below the spine of the scapula. On palpation, the right ribs posteriorly showed decreased respiratory excursion as compared with the left. Tactile fremitus was diminished over the right chest posteriorly from the third to the tenth rib; over this area there was moderate dullness with diminished breath sounds and vocal fremitus. A few asthmatic wheezes were heard over this area. These were not persistent. Liver, spleen and kidneys were not enlarged nor palpable.

There was some epigastric soreness intensified by coughing.

Neurological examination was negative.

The patient has had a slight irregular temperature as 99.3 to 100.

Laboratory Data:

R. B. C., 5,400,000; W. B. C., 8,950; Hgb., 82 per cent; Polys., 70 per cent; Lympho., 27 per cent; Mono., 3. Repeated urine examinations were all normal. Wassermann and Kahn tests were negative. Blood sugar, 0.095 per cent; N.C.N., 33.4 mgm.

X-ray examination (August 8, 1931) made of the chest stereoscopically in the postero-anterior direction revealed an area of parenchymal consolidation in the right lung involving the middle and superior portion of the lower lobe. Process extended out from the root of the lung in a somewhat triangular shaped fashion. It had the appearance of being an acute nontuberculous type of process. There was no evidence of breaking down of the lung tissue or of free or encapsulated fluid. The left lung was entirely clear. Heart shadow was of normal size. Aortic shadow was slightly tortuous.

Re-examination made of the patient's chest (August 14, 1931) showed slight extension of the process in the right middle and lower lobe area since the former examination.

The patient's kidney, ureter, and bladder regions were examined. The outlines of both kidneys were shown distinctly. They were normal in size, shape and position. There was no evidence of a tumor shadow, or renal, ureteral, or vesical calculus shadow.

Re-examination made of the patient's chest (August 17, 1931) revealed a slight extension of the process in the right middle and upper lobe areas since the last examination (Dr. L. Reynolds).

Report of Bronchoscopy Examination (August 12, 1932): The patient coughed a great deal throughout the examination. There was a peculiar twisting motion to the whole right bronchial tree and on inspiration seemed to be drawn to the right. The mucosa of the trachea and large bronchi was deep red and the right bronchus was thickened. There was no evidence of encroachment nor a frank tumefaction nor a foreign body though a gray mass of mucoid material appeared in the middle lobe bronchus. This was removed by suction. It would be surprising if this were a plug. We suspect this case to be one of malignancy of the lung substance not having presented in the lumen of the bronchus. We suggest another examination in a week or ten days (Dr. H. Lee Simpson).

The patient was given deep x-ray therapy over the involved area and was instructed to return in six weeks. He returned to Harper Hospital on September 15, 1931. He appeared pale and had lost weight and the cough was lessened. The entire right chest was flat anteriorly and posteriorly with absent breath sounds. Evident signs of pleural effusion were present and 1,450 c.c. of blood tinged fluid were removed by thoracentesis. Reaccumulation quickly took place and one week later 1,500 c.c. of hemor-

rhagic fluid were removed. One week later fluid was again removed. Guinea pig inoculation was performed with the pleural fluid with negative results. Pleural fluid culture gave no growth. Tuberculosis culture was also negative.

Re-examination of the chest by x-ray after removal of 1,500 c.c. of fluid (September 12, 1931) showed the mass involving the right middle and upper lobe region. The right costophrenic sinus region was clear (Dr. L. Reynolds).

Deep x-ray therapy was again given and later the fluid was removed again. However, the right chest became entirely solid with the tumor mass. Metastases to the right clavicle occurred. Biopsy was not permitted.

The patient expired November 28, 1931. Autopsy was not permitted.

The course of events in this case leaves no doubt as to the diagnosis even though autopsy was not obtained. It is a good example of the pulmonic type of lung malignancy and illustrates the difficulties encountered in early diagnosis both as to physical signs and x-ray examinations. At no time did hemoptysis occur while this patient was under observation. Early bronchoscopic examination with the finding of peculiar twisting motion of the right bronchial tree on inspiration caused the bronchoscopist to consider pulmonary cancer and further observations surely confirmed his findings.

BRONCHOGENIC CARCINOMA

Case 4. J. A., white, female, aged forty-four, occupation—housewife.

The patient was admitted January 11, 1932. Three years ago she had an attack of bronchitis from which she recovered fully in two weeks. She has had no pulmonary symptoms since, until three weeks ago, when she developed a cough which was productive of bright red blood. She has four children living and well. She has had two miscarriages, cause unknown. Past history was entirely negative. Family history negative. The patient was four months pregnant. There was no history of aspiration of foreign body.

Physical examination revealed a fairly well nourished white female, quite restless and very dyspneic, also coughing and expectorating blood. The spoken voice was somewhat hoarse. Eyes—pupils were equal and reacted properly to light and accommodation. Conjunctiva and sclerae were clear. Chest expansion was definitely impaired on the left side. The right chest was hyperresonant anteriorly. Posteriorly over the left chest, resonance was diminished from the apex to the level of the fifth thoracic vertebra. Below this the resonance was increased. Increased broncho-vesicular breathing was heard over the entire chest with numerous subcrepitant râles at the base. In the left chest, the breath sounds were practically absent from the apex to the level of the fourth rib. Below this the vesicular breath sound was diminished. Breasts were normal; no masses palpable. Cardiac dullness was increased to the left and upwards, also to the right. Systolic and presystolic murmurs were heard at the apex and a harsh systolic murmur was heard over the aortic area. Pulse rate was 120; blood pressure, 132/74. Abdomen was normal except for

uterine enlargement. Reflexes were normal. No enlarged glands were palpable.

Subsequently a moderate degree of icterus developed. One week after admission a mass developed at the sternal end of the clavicle, also slight ptosis of the right eyelid and distinct weakness of the right arm, also severe head pains. Hemoptysis was somewhat less.

On January 12, 1932, electrocardiogram showed sinus tachycardia. On January 20 bronchoscopic examination was attempted. Laryngeal examination with a mirror revealed paralysis of the left half of the larynx. In view of the laryngeal paralysis due to pressure on recurring laryngeal nerve, coupled with the fact that the patient had a cardiac lesion, we felt there was strong possibility that we were dealing with a dissecting aneurism and it seemed inadvisable to do a bronchoscopic examination at that time. We were influenced also by the lack of encroachment of the shadow of the tumor to the right of the sternum. This would not be incompatible at present with a greatly dilated auricle or of aneurism of the left portion of the arch of the aorta. Bronchoscopic examination was delayed for further observation.

On January 30 a small mass 2 cm. in diameter was removed between the clavicle and the first rib. This mass extended back into the chest wall. Examination of this mass showed advance carcinoma, probably primary in lung (Dr. P. P. Morse).

On February 1 block made of sputum and section consisted of fibrin and mucin with a few scattered epithelial cells. There was nothing suggestive of malignancy.

Laboratory Data:

Blood Count: R. B. C., 3,020,000! Hgb., 65 per cent; W. B. C., 12,050; Polys., 88 per cent; Lympho., 10 per cent; Mono., 2.

Urine: Dark, amber color. Acid reaction. Sp. Gr. 1014. Alb. 1 plus. Sugar, negative.

Bile: Sediment showed pus cells.

Sputum findings were negative for tuberculosis.

Blood sugar on admission, 0.105 per cent; N. C. N., 23 mgs.

Icteric index (January 26, 1932) 15; (February 1) 25; (February 10) 30.

Blood Wassermann test was negative.

X-ray examination of the patient's chest (January 12, 1932) reveals it to be symmetrical (Fig. 1). The mediastinum was over toward the left side from its normal position, especially in its upper portion as a result of the partial atelectasis in the upper lobe. There was a mediastinal tumor mass extending out to the left side which obscured the transverse and descending portions of the thoracic aorta, and had partially compressed the left upper lobe. The exact nature of this process we were unable to determine from the films. It might be a primary tumor arising from the lung, Hodgkin's disease, or a lymphosarcoma. Therapeutic exposure of x-ray over the mediastinal middle and lower lobe areas was suggested, there were increased peritruncal markings and discrete areas of increased density which suggested metastatic processes. Further study of the patient's chest under the fluoroscope was indicated.

Fluoroscopic survey of the chest (January 25, 1932) revealed a tumor mass extending out from the superior anterior mediastinal area which seemed to be unassociated with the aortic shadow. The mediastinum was displaced toward the left side on deep inspiration. There was partial atelectasis of the left upper lobe.

Re-examination made of the patient's chest (January 29) still showed the tumor mass extending out from the mediastinum into the left upper lung field (Fig. 2). The shadow was a little larger in size than was observed formerly and the small shadows

which were suspected of being metastases into the right lung field were a little more distinct at this time, especially those at the level of the first, second and third interspaces. Skull examination revealed

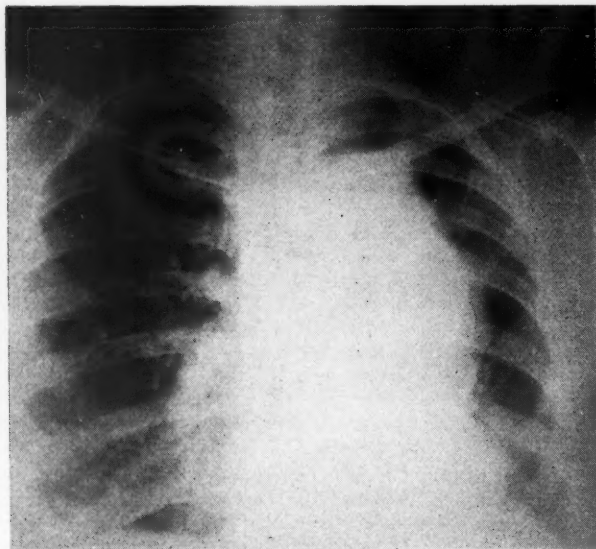


Fig. 1. Case 4.

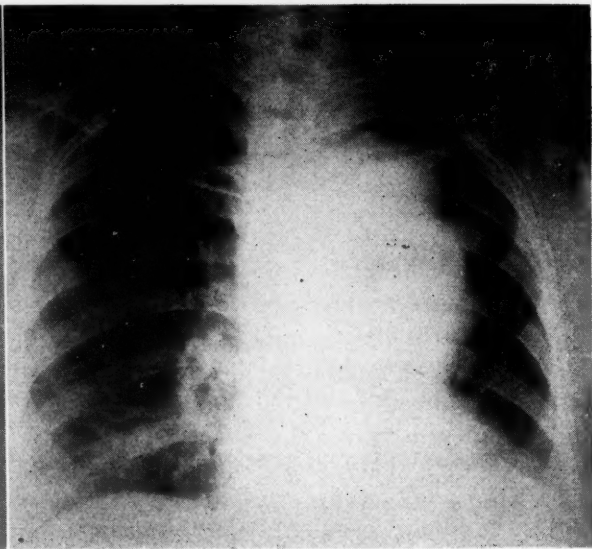


Fig. 2. Case 4.

no evidence of metastases to the bones of the skull or increased intracranial pressure change (Dr. L. Reynolds).

Complete x-ray examinations were also made of the genito-urinary system, skull, esophagus, spine and pelvis for possible metastases, all of which were negative.

On February 2, 1932, 100 mg. of colloidal lead was injected intravenously, also deep x-ray therapy given over the left chest and liver. During this admission to the hospital the highest temperature varied from 99 to 100.2 degrees. On February 5 the patient was discharged and was readmitted on March 10 when she had had a stillbirth. The physical signs were similar to those found upon first admission, except for enlargement of the liver, marked weakness and cynosis. Death occurred March 18, 1932. Autopsy was not permitted.

This case again clearly illustrated the difficulty encountered in the diagnosis of lung malignancy. The cardiac murmurs, hemoptysis, dyspnea, hoarseness, icterus, tachycardia, chest findings and pregnancy could readily confuse the issue as it did, and cause the observer to think of mitral disease with decompensation. The diagnosis was confirmed in this case by examination of the material removed at biopsy. It is unfortunate that the condition of the patient did not permit further bronchoscopic examination and that permission for autopsy could not be obtained; however, I believe from the location of the mass that the cancer was bronchogenic in origin. No doubt the rapid progress of the case may have been in some measure due to the coexisting pregnancy.

SUMMARY

1. A description of the symptoms, pathology and physical signs of primary car-

cinoma of the lung is presented.

2. The marked variation in symptomatology and physical signs is noted.

3. The importance of early diagnosis and treatment is emphasized.

4. Case reports are presented with the history of a possible cured case.

I wish to extend my thanks to the various men, whose names have been mentioned, for their reports in connection with the preparation of this paper.

510 Kresge Building.

REFERENCES

1. Adler, I.: Primary malignant growth of the lung and bronchi. New York. Longmans Green & Co., 1912.
2. Blankenhorn, M. A.: Nelson Loose Leaf System, 3:523.
3. Editorial: Jour. A. M. A., 9:478 (August 6), 1932.
4. Evans, Wm. A., Leucutia, T.: The roentgen-ray treatment of Intrathoracic Tumors. The American Review of Tuberculosis. Vol. XXI, No. 1 (Jan.), 1930.
5. Fried, M. B.: Primary carcinoma of the lungs. Arch. Int. Med., 35:1 (Jan.), 1925.
6. Fried, M. B.: Primary carcinoma of the lung. Bronchogenic cancer—A clinical and pathological study. Medicine, 10:373 (Dec.), 1931.
7. Leddy, E. T., Vinson, P. P.: The Roentgen Treatment of Bronchogenic Carcinoma. American Roentgen Ray Society, Detroit, Michigan, Sept. 29, 1932.
8. McCrae, T., Funk, E. H., and Jackson, C.: Primary carcinoma of the bronchi. Jour. A. M. A., 89:1140, 1927.
9. Osler, Wm.: Principles and Practice of Medicine. Osler's 11th Edition. Pg. 663.
10. Rodgers, W. L.: Primary cancer of lung: Clinical and pathologic survey of fifty cases. Arch. Int. Med., 49: 1058 (June), 1932.
11. Weller, Carl Vernon: The pathology of certain signs and symptoms in primary carcinoma of the lung. Ann. Int. Med., 2:725-746 (Feb.), 1929.

PETROSITIS

WILLIAM S. GONNE, M.D.†
DETROIT, MICHIGAN

For many years the pediatricians and the otologists have been interested in the problem presented by otitic meningitis. In the past few years numerous studies and pieces of research work have been carried out on the anatomy, histology, and embryology of the temporal bone with the idea of making more clear this dreaded complication of middle ear infections. This work has been done both in this country and abroad, but the most complete work has been carried out in this country by Dr. H. J. Profant, of Santa Barbara, California, and Dr. Samuel Kopetzky, working with Dr. Ralph Almour in New York. The results of this work have given us some new ideas in regard to middle ear infections. We now speak of them as temporal bone infections, which includes the zygoma and petrous tip, as well as middle ear and mastoid region.

Ever since Gradenigo published his first monograph in 1904, on the syndrome bearing his name, suppuration of the middle ear, pain in the temporoparietal region, due to irritation of the fifth nerve, and paralysis of the sixth nerve, considerable interest has been stimulated in its pathogenesis. Various theories have been expounded and explanations offered as to the underlying pathologic changes involving these nerves. The various explanations are, briefly: circumscribed suppurative meningitis; localized pachymeningitis; serous meningitis; inflammatory edema of the tip of the petrous pyramid; toxic neuritis, and reflex.

The temporal bones have been studied and have been sectioned from the mastoid process to the apex of the petrous pyramid so that the infectious process could be traced throughout. The results of these studies have shown that this syndrome is not characteristic of a specific lesion and does not form a distinct clinical entity. No constant etiological factor exists which is responsible for that triad, that Gradenigo describes, even though infection of the petrous pyramid may exist in the majority of instances.

It is the purpose of this paper to discuss the anatomical, histological, and embryological structure of the temporal bone, particularly in the pneumatized bone, and to follow the routes of infection from the middle ear, the symptomatology and clinical course of petrositis.

Anatomically the temporal bone is composed of three parts: first, the external pro-

tective portion made up of the squama, the tympanic ring, and the mastoid with its pneumatic cells. The middle portion contains the functioning organs, the middle ear, the labyrinth and the cochlea. The inner third of the temporal bone, which extends intracranially from the labyrinth, contains the petrous part or the pyramidal tip, and in this is found the eustachian tube and the carotid canal which bears the carotid artery.

From an histological standpoint, the petrous portion is the same as the mastoid cells. The development is coincident with and analogous to the development of the mastoid cells.

Embryologically, Wittmack has established the mechanism of pneumatization or cellular formation in the temporal bone. From the lymphatic cavity in contact with the atmospheric air through the eustachian tube, the same steps must take place in the growth and development of a pneumatized petrosal pyramid that take place in the growth and development of a pneumatized mastoid process: the same recession of the subepithelial strata of tissue, the same gradual absorption of marrow-filled cavities to the fully developed stage of cellular structure lined with similar epithelium and subepithelial tissues and nourished by blood vessels in the walls of the cells. When cell formation is finished and the specimen is normal, the end-result is a fully pneumatized temporal bone, the pneumatization extending to the squama, zygoma, petrous tip, mastoid cells, and even the occipital bones.

Pneumatic cells have been described around the mouth of the eustachian tube, on the floor of the middle ear and in the antrum tympanicum. (The mucous membrane of the eustachian tube, of the middle ear, mastoid antrum and mastoid cells are all anatomical outshoots of the upper respira-

†William S. Gonne is Director of the Nose and Throat Division of the Children's Hospital of Michigan.

tory tract.) Any disturbance in the normal processes of cell formation leads to different degrees of pneumatization or types of bone formation; dissections of adult temporal bones show three types: the compact or sclerotic; spongy or diploic and cellular or pneumatic. In a single specimen one, two or three types may be present. In a series of several hundred anatomical dissections, it was shown that about 22 per cent were sclerotic; 43 per cent diploic, and 35 to 36 per cent were pneumatic.

In this discussion, we are interested only in the pneumatic type and in how the inflammation gets to the petrous tip or apex. This we are convinced depends upon the degree of pneumatization of the petrous bone. However, in any infectious process one must not forget the virulence of the infection, and the resistance of the patient. No case of petrositis has ever been reported in a sclerotic temporal bone.

Since pneumatization goes out from the tympanic cavity and mastoid antrum, on the one hand to develop the adult type of pneumatized mastoid process, and on the other to develop the pneumatized petrosal pyramid—the routes of invasion become important. They have been listed as follows: first from the antrum or epi-tympanic space above or below the superior semicircular canal, following the posterior superior surface of the petrosal pyramid into the tip; second, from the peri-tubal cells, that is, the cells around the eustachian tube, into the tip; third, through dehiscences in the tympanic wall, or from the peri-tubal cells into the carotid canal, then into the tip.

It cannot be denied, however, that the majority of infections of the petrous pyramid that reach the apex or tip, do so by direct extension through the cells, and these most often along the peri-labyrinthine cells originating in the antrum and epi-tympanic space of the middle ear. Therefore this should be considered more as an extension from a middle ear infection than from a mastoid infection. All infections, however, do not necessarily extend to the apex, nor do they always involve the sixth nerve.

Clinically, these cases classify themselves into two groups: first, the acute case wherein the purulent contents of the pneumatized petrosal pyramid are involved in an acute infection with symptoms which, if not drained, will early lead to an intracranial in-

vasion and a development of generalized meningitis; second, the chronic case wherein nature provides an egress from the encapsulated pus pocket in the petrous tip, and there is formed a fistulous tract from the petrous pyramid which leads to the tympanic cavity, the empyema eventually escaping through the tympanic membrane as a persistent profuse otorrhea. Such cases do not necessarily lead to meningitis but are apt to eventuate in a chronic discharge from the middle ear. In some instances, final healing results without surgical intervention. It has been shown in most of the cases reported, if not all, that suppuration of the mastoid process preceded the development of the suppuration of the petrous pyramid. All cases developed in pneumatized temporal bone and in the majority of instances the suppuration of the mastoid process was operated on and the middle ear cleared up and an interval of time elapsed before the onset of symptoms denoting the spread of the infection towards the pyramidal tip. When the middle ear began to dry, there ensued after a time a reappearance of a profuse ear discharge, the origin of which could not be traced to the mastoid wound. This was accounted for by a rupture of the bone encompassed pus pocket into the middle ear and the avenue of egress being through the cells around the tympanic mouth of the eustachian tube and from these to the middle ear.

Let me repeat, suppuration of the petrous pyramid in a pneumatized bone must be considered as a complication of purulent otitis media rather than complication of mastoiditis.

The symptomatology of suppuration of the petrous tip has been divided into four periods: first, the period of eye pain and aural discharge; second, the period of low grade sepsis; third, the period of quiescence; and fourth, the meningitic period. The eye pain in the majority of instances is the first symptom to make its appearance, although occasionally it is preceded by or associated with a sharp pain in the ear itself. The pain is in the eye on the side of the lesion and is sometimes felt directly within the orbit itself. It is described as a deep seated ocular pain and *at the onset* is nocturnal in character. During the day the patient is more or less comfortable, but as evening comes on the pain becomes more and

more intense. The patient describes it as being just above the eye or through the eyeball. This peculiar type of pain is highly significant of petrosal tip suppuration and puts one on his guard to look for this complication. It is the result of an irritation of the first or ophthalmic branch of the fifth nerve, which is firmly bound down to the temporal bone in its course from the ganglion to and through the cavernous sinus. This branch, altogether sensory in function, supplies the eyeball, the lacrimal gland, the skin of the nose, the upper eyelid, forehead and scalp.

The presence of post-operative pain after surgery on the mastoid process is to be expected. When, however, this pain assumes definite characteristics, it is usually significant of some complication. A dull aching pain felt on the side of the head, in the neck, and persisting for a time after operative interference, is very significant of lateral sinus thrombosis. Pain in the nape of the neck, and in the occiput, makes one suspicious of an impending meningitis.

A posterior fossa lesion cannot, for anatomical reasons, involve the region of the Gasserian ganglion. Since the tentorium separates the middle from the posterior fossa, therefore the fifth nerve, which is wholly situated in the middle cranial fossa, is not affected by a localized infection in the posterior fossa. It is clear that pain in the face and teeth can occur with a lesion located anywhere in the middle ear or mastoid process. This pain will be relieved, however, as soon the source of irritation in the middle ear or mastoid is removed. When surgical removal of the purulent focus in the mastoid process and in the middle ear does not result in cessation of pain, distributed over an area supplied by the second and third branch of the fifth nerve, the persistence of pain should be viewed as suspicious of a petrous tip suppuration, particularly when it is continuous and not of the spasmodic type like tic douloureux or neuritis.

In petrosal tip suppuration, we are more likely to get a constant ache than a spasmodic pain. It has been the experience of most otologists that a simple complete mastoidectomy will cause the middle ear to cease discharging within one to three weeks after the operation. In petrosal tip suppuration, the middle ear continues to discharge

until the lesion in the petrosal tip is identified and eradicated, or else after a period during which the ear was dry a profuse discharge suddenly reappears at the same time or shortly before the onset of the eye pain. There have been other signs which occasionally present themselves early in the course of petrosal suppuration, but are not diagnostic. They are: facial weakness, vertigo, nystagmus and vomiting. The eye grounds or fundus examinations are usually negative, and all laboratory tests are of no value, except the

X-ray Findings.—When a low grade sepsis continues, accompanied by eye pain and aural discharge, in a pneumatized mastoid or temporal bone, it is viewed very strongly as evidence of petrosal tip suppuration. When the drainage is established, either spontaneous or by operative measures, the fever subsides and the temperature gradually returns to normal. This is followed by a period of quiescence which, in the cases reported by Dr. Kopetzky, varied from five to nineteen days, in which they are free from all pain of diagnostic importance. From the standpoint of the patient's safety, this period is considered by Dr. Kopetzky as the most dangerous one, since the evidence leads both patient and physician to conclude that the lesion is clearing up. On the contrary, this period coincides with the invasion of the endocranium. As the lesion progresses, if sufficient drainage is not established through the peritubal cells or through the tract of invasion, the apex becomes eroded. Once the perforation has been formed there results an extra dural abscess which bears the same relationship to the disappearance of pain in the lesion under discussion as does the formation of a subperiosteal abscess in an acute mastoiditis. The inflammatory tension on the dura in one instance and on the periosteum in the other is relieved. The terminal period presents in the main a clinical picture of an acute purulent meningitis. One notes a gradual onset of cervical rigidity, high temperature, Kernig, severe generalized headache, projectile vomiting, and a purulent spinal fluid. It is with great interest to the clinicians that in none of Dr. Kopetzky's cases reported through 1931 was the sixth, or abducens, nerve involved. On the other hand,

many cases are on record wherein an abducens paralysis has been found associated with a suppurative lesion in the petrous tip. Because of the fact that abducens palsy is not a constant symptom in the sense that retro-orbital pain and persistent otorrhea with low grade sepsis are constant, it should not be looked upon as a necessary factor in the establishment of a diagnosis of purulent petrositis.

We have taken up this point in detail because of the insistence of some men to make their diagnosis upon the classical Gradenigo syndrome. The laboratory findings in these cases are not diagnostic excepting the x-ray and in every case where you are dealing with a pneumatic mastoid I believe that a ray should be taken of the petrosal tip at the time of x-ray of the mastoid cells. All of the cases reported before the primary operation on the mastoid process showed on x-ray examination extensive cellular elements or a very completely pneumatized mastoid bone. The ray of the mastoid showed that the pneumatization had extended to the zygoma, the squama, and occipital bone, and suggested the possibilities that the petrous pyramid was also pneumatic. By our method of x-ray we can now take x-rays of the petrous pyramid and in many instances note the progress of the infection in that direction.

REPORT OF CASE

The patient was a nine year old girl who had been having ear trouble for about one year prior to her admittance to the clinic. Her previous history showed that she had whooping cough two years before, and measles three months before. Following the attack of measles, she developed more definite symptoms of mastoiditis. She was admitted to the hospital July 26, 1932, and was operated on August 2, 1932. There was no dural exposure, but the lateral sinus was exposed. The mastoid cavity was very large and deep and there were cells extending behind the lateral sinus and into the zygoma and into the tip cells, showing it to be a large pneumatic mastoid. The patient was discharged eight days after operation, with a normal temperature, and with her ear still discharging. She returned to the clinic one week later, August 17, with the history of high temperature the night before and was admitted to the hospital for observation. The temperature subsided, but ran a rather irregular course, not going above 100. She complained of a headache which extended behind the right eye and there was evidence of partial paralysis of facial nerve and

the extra-ocular muscles. The ear was discharging more freely but the discharge from the mastoid wound was lessening in amount. The headache and paralysis progressed and she was again operated on September 2, 1932. At this time granulation tissue in the mastoid cells was curetted out and the cavity and cells were cleaned out behind and below the semicircular canals. There was a fistulous tract extending down in the petrous portion of the temporal bone. The mastoid culture showed a streptococcus infection. The blood showed 12,800 white cells and 80 per cent polymorphonuclears. Blood Wassermann test was negative. At this operation there was also an extensive exposure of the dura. The facial paralysis progressed and the patient developed a definite nystagmus. The headache and eye pain disappeared following this second operation. Three days after the operation, the spinal cell count, which was above normal at time of operation, was 2,900, with a 95 per cent polymorphonuclears, but no organisms were found. Repeated spinal and cistern punctures were taken daily for five days. The spinal fluid cell count dropped to 180 cells with 90 per cent lymphocytes. At no time was there a positive culture from the spinal fluid. The last spinal puncture was done September 10, 1932. At no time did the fundus examination show pathological changes. The nystagmus cleared and the eye muscles regained their normal function. The child improved quite rapidly and the facial paralysis was clearing up, at time of discharge from the hospital, which was four weeks after the second operation. The eye could be closed almost completely, and the right corner of the mouth could be pulled over almost normally. The ear was dry, and the hearing, which was somewhat impaired at the time of operation, was improved to about 80 per cent normal. This I consider a case of petrositis which was drained posteriorly to the semicircular canal, due to the fistulous tract which was found extending into the petrous tip.

In conclusion, I wish to state that cellular structure of the petrous portion or pyramidal tip of the temporal bone is more frequent than is generally known. It can be expected in any temporal bone which shows a fully pneumatized mastoid structure on x-ray examination. When the cells of the petrous tip become infected it is considered a complication of the middle ear rather than of the mastoid cells. The first definite clinical sign to appear is pain in the area supplied by the ophthalmic branch of the trigeminal nerve which is in the region of the eye. The sixth nerve may or may not be affected, therefore the Gradenigo syndrome, as such, is not diagnostic of petrositis.

The only laboratory examination of any benefit in following the clinical course is the x-ray of the mastoid and the petrous tip. Infections of the petrous tip following complete mastoid operations show themselves clinically as chronic otorrheas, when they do not early lead to meningitis or are not cleared up by operative procedures.

DIPHTHERIA*

SOME OF TODAY'S PROBLEMS

DON W. GUDAKUNST, M.D.†

DETROIT, MICHIGAN

The successive introduction of the culture method of diagnosis, the discovery and perfection of antitoxin, the extended use of various prophylactic agents such as toxin antitoxin and toxoid, have all of course, markedly reduced the incidence of the disease, but they have not either singly or combined, as yet, eradicated diphtheria. Each new weapon exhibited in the fight against this disease brings forth new and more complex problems needing our attention. It was pointed out by Godfrey‡ that the protection of 30 per cent or more of the preschool population and from 50 to 70 per cent of the school age group seems to prevent the appearance of diphtheria in epidemic form. In his original contribution Godfrey named two exceptions, of which Detroit was one, where this seemingly had not been brought about. Detroit had continued a high case rate in spite of a high protection rate.

In an attempt to find the reason for this exception, last year Detroit started a detailed epidemiological analysis of the situation as it existed at that time. In an unpublished paper presented before the American Public Health Association in 1932, Vaughan and Gudakunst showed that the thirty per cent rule of Godfrey's did hold in Detroit when the figures for the city were broken down into thirty some small areas. It was shown that when the immunization rate of any of these small areas was above thirty per cent for the preschool group, that this area did not have diphtheria in epidemic proportions. This study was continued during the year in order to determine some of the factors that might be contributing to the spread of the disease throughout the city.

A group of six especially well trained field nurses was placed under the joint supervision of the head of the communicable disease nursing division and of a physician acting as diphtheria controller for the city. Every case of diphtheria reported to the department has been carefully studied by this staff—studied as to possible source, spread, and the immunization history of the patient and all the contacts. Much valuable epidemiological information is being gathered by the efforts of this group. Only a few of the

factors involved in the continuation of the spread of the disease can be presented in this paper.

In the latter part of March, 1933, our attention was called to the fact that an inordinately large percentage of our reported cases were in some way associated with two of our large hospitals, which we shall designate as Hospital A and Hospital B. For the most part, the patients reported as having diphtheria had not themselves been patients in these hospitals but it was observed that some other member of their family had been cared for during the immediate past. Of the two institutions, Hospital A contributed by far the greater number, and, because of the nature of the institution, lent itself to a more careful epidemiological study. Of a total of 269 consecutive proven cases reported in Detroit from March 1 through August 31, there were forty-eight (18 per cent) that had in some manner been associated with Hospital A. This was too great a number to be mere chance and the condition had persisted over too definite a period of time to allow for any other thought to be held but that in some way this hospital was a major factor in the spread of the disease. Of 210 previously reported consecutive proven cases, only five had been so associated with this hospital. Due to a combination of circumstances the first part of the outbreak connected with this institution was not completely studied; however, it continued during the months of May, June, and July. During this time, a similar proportion of cases were associated with this hospital as during the first part of the period. It was found that by far the greatest number of cases arising in connection with this outbreak were persons associated with children in attendance at the mastoid dressing clinic

*Read before the Pediatric Section of the Michigan State Medical Society, Grand Rapids, September 14, 1933.

†Dr. Gudakunst is Director of the School Health Service, Department of Health, Detroit, Michigan.

‡Godfrey, Edward S., Jr.: Jour. Amer. Pub. Health Assoc., 22: No. 3 (March), 1932.

of the out-patient department. There were thirty-five diphtheria cases reported in twenty-eight families, all of whom had one or more of their children in attendance at this particular clinic from one to three times a week.

Every child attending this clinic, all of the professional staff, the parents and guardians accompanying the children to the hospital, and all others coming in contact with this part of the hospital program were repeatedly cultured for the presence of Klebs-Loeffler's *Bacillus*. No adults, parents, nurses, maids, or physicians were found to be carriers. This condition was true not only at the onset but remained so throughout the several months of the outbreak. However, of the ninety-one children in attendance at this clinic during the latter part of June and the first part of July, there were thirty-three who had positive cultures of either the nose, throat, mastoid wound or of all three. There were 36.4 per cent of the children with positive cultures found to have a virulent organism.

The group of children with positive cultures, both virulent and non-virulent, were separated from the rest of the clinic. They were denied the privilege of coming to the hospital on a public conveyance. They were held in partial isolation at home by the use of a warning sign. They were collected in a city bus and brought to the clinic for the necessary medical care at a time when they would not be associated with other children. While in the clinic they were given additional treatments directed at the eradication of the carrier state. While final reports are not yet available, it seems that satisfactory results were obtained by spraying the nose, throat, and wounds with various antiseptics such as mercurochrome, aqueous solution of merthiolate, organic silver salts, etc. During the last month of observation, there were but four additional carriers who were discovered among the remaining children of this entire clinic which, with its various constant additions, involved 150 children in all.

During this period of time, numerous carriers were discovered through various channels throughout the rest of the city. All who could possibly do so were sent to physician's private offices for treatments. It was found advisable to collect the remainder by bus and establish a treatment clinic for

them at the city communicable disease hospital, where the same technic of treatment was used as with the group described for the out-patient department of Hospital A.

Of the group of thirty-five children with positive diphtheria cultures, there was but one who subsequently developed diphtheria in a clinical form. This child was detected with a positive culture during what undoubtedly was the incubation period of the disease and should not be considered as a true carrier. None of the remaining thirty-four developed diphtheria but there were five additional cases developing in the families of these individuals, even after they had been detected, after treatment had been started and all precautions taken to safeguard the home.

Of this group of true carriers known to be infected with a virulent strain of the organism—virulent as demonstrated both by laboratory and clinical tests—there was a degree of immunity that must be considered. The one child who developed diphtheria among this group had never been protected by the use of toxin antitoxin or toxoid; there was no record of a Schick test having been done. Of all the rest, thirty-four in number, twenty-eight had received active protection at some time in the past. Four others were found to be Schick-negative. The remaining two gave no history of active protection. These two were eight and nine years of age.

Here we have a situation of the greatest importance. This was a group of children largely of the younger ages gathered together for brief periods of time from all parts of the city. An epidemic developed among them—an epidemic that was without symptoms. These children had entered this group free from infection, as demonstrated by negative admittance cultures. There was no way of diagnosing or suspecting the state without repeated, careful, laboratory examinations. These children were merely carriers of the disease and they were spreading the true disease to all other parts of Detroit. They had been so protected by the production of an artificial immunity that they themselves did not become ill. They were not contacts to cases of diphtheria but were merely contacts to other carriers. In other words, we have here an epidemic of carriers made possible by the very device that was intended to protect the community from

diphtheria. Unwittingly these persons acted as the agents for the spread of the disease far more effectively than if they had not been protected. For, if they had not had active immunity induced, they undoubtedly would have developed clinical symptoms and would have been placed under quarantine restraint before there was the opportunity of producing as much damage as they did in this way.

These children carrying the diphtheria germs into various parts of the city gave rise to at least forty-eight additional cases. We have no way of telling how many of the other cases for which we have not been able to find a definite source might have likewise been associated with this same small group of carriers. Nothing in this argument should be taken as an incrimination of the value of diphtheria protection. The exact opposite is intended. It shows that there is still great need for immunizing a still higher percentage of all our children. It is safe to assume that the hazards for the individual, unprotected child are greater than they might have been without the protection being given to such a large percentage of other children. The unprotected child is now faced with an increased number of carriers among his associates.

The epidemic of carriers spread from the out-patient department of Hospital A to in-patients. There were comparatively few cases, however, as the result; one physician, one nurse, and not over four children was the entire toll.

A similar diphtheria carrier problem arose in Hospital B, but because of the difference in age of patients, type of case admitted, and the length of stay both in the hospital and in the out-patient department, different epidemiological manifestations were present and different control measures were instituted. The problem here was one of isolation of the positive case from the non-infected individual. This was accomplished by admitting all children into a quarantined area where they were kept until the culture report of nose, throat or abnormal discharge, or wound was received. If the report was negative they were assigned from the quarantined area to the appropriate ward or service of the hospital. If the report was positive they were removed to an isolation ward for further study and observation. If the case was determined to be

a true carrier, the child was then transferred to the city contagious hospital. In many instances it was found that there was but a single report of a positive culture. In certain of these the culture was found to be virulent. While this group of what might be termed transient virulent carriers is not large and the study of their immunization history is by no means complete, there are several leads that need to be followed. It was noted, for instance, that of ten such cases there were four who gave a history of previous diphtheria having taken place one or more years in the past. This, taken in connection with the fact that none of the persistent carriers gathered in the group from Hospital A had been reported as diphtheria cases in the past, may be of some significance. Different types of immunity may be induced by artificial and natural immunization methods.

The prevalence of positive cultures among the childhood patients admitted to Hospital B was at times alarmingly high. From July 10 to August 10 there were 233 children between the ages of six months and fourteen years, drawn from all parts of the city, admitted to this hospital. Twenty-one (9 per cent) were positive carriers of diphtheria organisms. During the following month there were 207 such admissions, of whom but six (3 per cent) were positive.

This carrier epidemic was not confined to these two hospitals and nothing in this discussion should be construed to in any manner be a criticism of the operation or management of either of the two hospitals studied. It was only through their splendid coöperation that the work and necessary control practices could be carried out.

The menace of the carrier spread involved also the private practice of medicine. One physician with an extensive mastoid practice who had been apprised of the situation as we had found it, immediately began culturing all abnormal discharges; not only once, but repeatedly. One of his patients, who had been under his care for approximately six weeks and who had had a series of negative cultures of nose, throat and mastoid, suddenly was found to have diphtheria bacilli in the discharge from the mastoid wound. This condition was reported to the Department of Health and one of the corps of special nurses assigned to study the case. We found in the course of our routine in-

vestigation that a twelve year old girl had acted as nursemaid for this mastoid patient for the preceding few days. On the day of our investigation this patient was reported by her private physician as having diphtheria which terminated fatally. The conclusion was drawn as a result of this investigation that this second child developed her diphtheria as the result of association with the carrier state of the mastoid wound. Instances of this sort have repeatedly occurred during the past year. When diligent search is made, over fifty per cent of the cases can be attributed to a definite source, over half of which we have classified as carriers.

Another point that has been most forcefully brought to our attention during the recent past is the relative lack of reliance that can be placed in the virulence test as a measure of the menace of a diphtheria carrier to the public. We shall cite but two instances to illustrate this point. The first is that of a nurse who had been on duty at the contagious disease hospital. This girl developed a diphtheria carrier condition which was particularly resistant. The organisms were at first demonstrated to be virulent as tested with a guinea pig. Her nose and throat were treated by various methods. At the end of six weeks her cultures were only occasionally positive; then they became non-virulent. The patient was discharged from the hospital, where she had been kept under isolation during this time. She returned to her home with her mother, who within one week developed a sore throat which six days later was diagnosed diphtheria. As a result of the delay the mother, after a few more days of illness, died of this condition. Three days following the death the nurse herself developed clinical diphtheria.

A second case is that of a boy who was transferred from a local hospital to the contagious disease hospital because of scarlet fever. During the course of this illness the child developed a positive Klebs-Loeffler's culture of both nose and throat. He had been actively immunized and did not develop diphtheria. He was kept in the contagious disease hospital for one month following his recovery from scarlet fever solely because of a persistently positive culture. Three successive negative cultures were then obtained and he was transferred to an orthopedic convalescent home in a nearby city. At this institution his culture was

found to once more be positive. This, however, was on two occasions reported to be nonvirulent. This condition persisted irregularly for over six weeks. No clinical cases developed in this convalescent home as all children in this institution had received active diphtheria protection and were known to have a negative Schick test. However, because of the possible hazard to the institution this child was returned to his home in Detroit. Within a few days after this his mother, whom he had not seen since the onset of his scarlet fever many months previously, developed diphtheria.

These are but two typical cases of many instances of the same sort. After protracted periods of observation and superficial treatment, carriers were found to have but irregularly positive cultures that were non-virulent, but when these same patients with their supposedly nonvirulent cultures were moved to an essentially new environment, where there were susceptible contacts, cases of diphtheria occurred. This sort of thing is not subject to definite statistical proof—it is always possible that the case developed as the result of exposure to some other source, but having happened so frequently we believe that the safer interpretation is that it is the result of reliance being falsely placed on a nonvirulent report from the laboratory.

SUMMARY

Each new weapon added to the armamentarium in the fight against diphtheria brings forth an array of new problems that have to be combated by extra precautions.

The immunization of large numbers of children seems to have increased the percentage of carriers.

This increase in carrier rate at times has amounted to epidemic proportions and the state is passed from individual to individual so that the source of a particular case is at times difficult to determine when this situation is not realized.

Mastoid wounds seem to offer a particularly good field for the development of the organism without clinical manifestations.

This conditions has been observed in both institutional and private practice cases.

The chronic carrier does not suddenly lose the diphtheria organisms but has periods of various lengths during which the field seems

to be free from this infection—only to have the condition recur in a dangerous way.

Absolute reliance cannot be placed on the nonvirulent culture as repeatedly individuals seem to have produced secondary cases after the report of a nonvirulent culture has been obtained.

The hazard for the *nonprotected* child

seems to have been increased, or at least not materially lessened, by the extensive use of active immunity-producing preparations.

Increased protection, involving a larger number of children, is essential. Individual risks for the unprotected child must increase in proportion to the number of positive carriers existing in a community.

THE RELATION OF ROENTGENOLOGY TO OBSTETRICS AND GYNECOLOGY*

ARTHUR R. BLOOM, M.D.†

DETROIT, MICHIGAN

The first attempt to demonstrate the foetal skeleton in utero by roentgenography was not encouraging. Although Levy-Dorn²⁵ recognized the foetal skull in a pregnant woman on an x-ray film in 1897 and Mullerheim²⁸ reported a similar observation in 1898, other obstetricians using exposures lasting about one hour and a half failed to obtain satisfactory results. As late as 1908 Bouchacourt⁴ stated that it was impossible to secure a roentgenogram of a living foetus. He believed if a skeletal shadow was obtained it was a sign of foetal death. However, in 1904 Albers-Schönberg² improved the technic so that more satisfactory roentgenograms of the foetal skeleton in utero were obtained. Subsequent advances and developments in x-ray apparatus such as the transformer, intensifying screens and the Bucky diaphragm have so improved the technic that at the present time we are able to obtain satisfactory demonstrations of the foetal skeleton from as early as the fifteenth week onwards. Exposures are now made lasting only a few seconds.

There seems to be a hesitancy on the part of the clinicians to subject their obstetrical patients to roentgenography for fear of injury resulting to the foetus, mother or both. This fear is based on the knowledge that therapeutic doses of x-rays have a deleterious effect on the offspring, sometimes resulting in physical or mental deformity and may produce sterility in the mother. However, this fear is unfounded when we are dealing with diagnostic doses, for the amount of x-ray used can in no way affect either, and it is accepted by all authorities as a harmless procedure. There is no record

throughout the entire literature of any injury to foetus or mother following the use of x-ray for purely diagnostic purposes.

This fear on the part of the profession is rather unfortunate, for roentgenography in obstetrics gives such accurate and definite information that it should be considered a necessity.

INDICATION OF USES

The primary function of x-raying the abdomen of a woman suspected of pregnancy is to demonstrate the foetus. True, the diagnosis of pregnancy can usually be made earlier by clinical methods but occasionally we need the x-ray to determine and establish the diagnosis beyond any shadow of doubt. This often occurs in cases of fibroids and ovarian cysts and pseudocyesis. The absence of foetal structures after the fourth month clearly makes the diagnosis that of some condition other than pregnancy. Stein⁴⁰ reports the following case: A fifteen year old girl was diagnosed as pregnant by the family physician. The family was so incensed that they threatened suit for defamation of character. The x-ray film demonstrating the foetal skeleton cooled their ire and they made the necessary provision for confinement. I had a similar case just a few months ago. A thirteen year old

*Read before the Maimonides Medical Society, February 13, 1933.

†Dr. Bloom is a graduate of University of Illinois, B.S. 1920, M.D. 1922. He served his internship at Michael Reese Hospital, Chicago, 1921-1924, and was a Fellow in Roentgenology 1924-1925. He was Roentgenologist of Michael Reese Dispensary and Associate Roentgenologist at Michael Reese Hospital 1925-1927. At present he is roentgenologist at North End Clinic and in private practice.

girl ceased to menstruate about seven months previous to her appearance, and she had a large tumor mass in the abdomen. She denied having sexual intercourse. Since no foetal heart tones could be heard, the physician's diagnosis was an ovarian cyst. X-ray clearly demonstrated a seven months old foetus. Similarly I have had cases in whom pregnancy was diagnosed and no foetal skeleton was found. These cases were proven on operation to be ovarian cysts.

AGE OF FOETUS DEMONSTRATED BY X-RAY

How early can the foetus be demonstrated? Until about ten years ago it was believed that the skeletal shadow could not be demonstrated until the sixth or seventh month. In 1921 Tousey⁴⁸ stated, "The foetal head shows well when it occupies the lower part of the uterus . . . but when it occupies the fundus the surrounding fluid produces so much dispersion as to make radiography unsatisfactory. The foetal bones are small and almost cartilaginous so that it is difficult to distinguish them in a radiograph." Recent publications report the demonstration of the foetus regularly after the fourteenth week and in some instances as early as the eighth or ninth week. In early pregnancy only some of the foetal bones are demonstrated. The ribs and vertebræ are usually first seen. I have demonstrated some ribs and vertebræ in a case twelve weeks pregnant.

Recently there has been some work on the demonstration of early pregnancy of the first or second month by the intra-uterine injection of lipiodol. Heuser¹⁶ reported his work in 1924 and Rucker and Whitehead³⁷ reported theirs in 1928. The diagnosis is based on the following signs: (1) relaxation of the uterine wall, (2) demonstration of the ovum, (3) closure of one tube and (4) failure to expel the oil. Personally I would be afraid to attempt this method for fear of producing abortion and the majority of roentgenologists are of the same opinion although the percentage of abortions reported to have resulted from the method is not higher than the general occurrence, which Williams estimates as one in five or six pregnancies. However, Rucker and Whitehead state that hystero-salpinography offers a means of making an early diagnosis of pregnancies which is especially valuable in such cases as tuberculosis in which a therapeutic abortion is indicated.

In 1921 Peterson³⁰ and later Stein and Arens⁴⁰ have been able to demonstrate what they believed to be signs of early pregnancy by means of trans-abdominal pneumoperitoneum examination. This consists of a broadening of the isthmus and globular enlargement of the fundus. Stein adds the enlargement of the broad ligament. Neither the method of utero-salpinography or pneumoperitoneum has met with universal acceptance by the roentgenologists and obstetricians.

POSITION AND PRESENTATION

In the later months of pregnancy radiography is of value in demonstrating the presentation and position of the foetus. In order to determine accurately this it is advisable to ray the patient in the prone, supine, and lateral positions. The relation of the spine and occiput of the foetus to the pelvis of the mother can readily be determined. Jarcho²⁰ has demonstrated cases of right occiput posterior, left occiput transverse, and face presentations. We have had frank breeches, single and double footing and hand presentations.

Stein reports the following case: A patient came into the hospital in her thirty-sixth week because of rupture of membranes. A roentgenogram showed a well flexed foetus in the right occipito-anterior position. Four days after the rupture of the membranes, the patient stated that the body was unusually active and she was having regular contractions. A film taken then showed a breech presentation. A spontaneous podalic version in a primipara three days after the rupture of the membranes is incredible but the incontrovertible radiographic proof is present.

The x-ray has also been of use in giving us more information as to the mechanism of labor.

DEMONSTRATION OF MULTIPLE PREGNANCIES, MONSTROSITIES AND ABDOMINAL PREGNANCIES

The diagnosis of multiple pregnancy by roentgenography is self evident and needs no further explanation other than to point out the fact that often it is advisable to confirm or disprove this diagnosis and to determine the presentation and position of the foetuses.

The recognition of foetal abnormalities

and monstrosities is greatly aided by x-ray examination as brought out by Dorland and Hubeny¹⁰ in their book. Often this is a life saving procedure as will be brought out by a discussion later of one of our cases. Such conditions as anencephaly, absence of vertebral bones and other changes can often be diagnosed in utero. Albano¹ reports a case of hydrocephalus in a breech presentation. Failure to diagnose this would have endangered the mother's life. Hydramnios and tumor masses can also be diagnosed. About seventeen cases of anencephalus diagnosed roentgenologically have been reported. The first was reported by Case⁷ in 1917.

The following is a case of ours at the Michael Reese Hospital which was not reported. A woman had been in labor for a number of days and it was decided to perform a cesarean section. Before the operation she was sent to the Radiological Department for examination. The purpose of this examination was evidently not clear to the surgeons as she was taken directly to the operating room before the films were developed. On examining the wet films Dr. Arens noticed an absence of the cranial vault although the face was clearly demonstrated. He rushed up to the operating room in time to prevent the operation. The patient was finally delivered by craniotomy.

Ovarian and abdominal pregnancies have been demonstrated by roentgenograms. In 1926, we reported a case of abdominal pregnancy by x-ray.³ The films of the abdomen disclosed the presence of the entire foetal structure, which lay in the right iliac fossa instead of the pelvis. Because of this appearance we diagnosed an abdominal pregnancy. On opening the abdomen an almost black amniotic sac was seen lying freely in the abdominal cavity. A macerated and partly desiccated foetus measuring 26 cm. was extracted. The placenta was adherent to the right border of the urinary bladder, the anterior and right lateral walls of the pelvis and the right broad ligament. The right tube and ovary were imbedded in the mass. The tube showed no evidence of pregnancy reaction or site of perforation on microscopic study.

INTRAUTERINE FOETAL DEATH

Recently there has been considerable mention of the roentgenographic diagnosis of intrauterine foetal deaths. In 1922 Spaul-

ding³⁰ and Horner¹⁸ independently reported cases of foetal death and described the pathognomonic signs. These findings were later confirmed by Greenhill,¹³ Doub,¹¹ Moss,²⁷ Portes and Blanche,³³ Bourland and Spangler.⁵ All the authors reported the findings in only a few cases. The signs are listed as: over-riding of the skull bone with cephalic asymmetry and acute angulation of the spine. Kehrer²³ stated that there were a number of x-ray signs of foetal death. If several of these are present they constitute conclusive evidence. These are as follows: (1) Super-position of flat cranial bones, (2) Shriveling of the cranial content, (3) Occipital prolongation of the head in the shape of an isosceles triangle, and (4) The sharp angular bending of the vertebral column in the form of kyphosis, lordosis, or scoliosis. Other signs less conclusive are asymmetry of the cranium, flattening of the biparietal vault of the cranium, and displacement of the back and face of the foetus away from the center of the uterus towards the wall of the uterus with simultaneous deflection of the spinal column.

In 1926 Stein and Arens⁴¹ published their work which was based on an exhaustive study of a large number of patients. They found the so-called evidence of foetal death in patients who delivered normal infants, and the absence of signs in many cases of dead foetuses. On one occasion, one of the above mentioned writers, who described the signs of foetal death, visited the Michael Reese Hospital and was shown the films without being told the subsequent history. He made the wrong diagnosis in a goodly percentage of cases. Stein and Arens came to the conclusion that the x-ray signs of intrauterine foetal death without clinical history were of no value.

PELVIMETRY AND CEPHALOMETRY

A review of the obstetrical literature as related to roentgenology reveals a number of articles devoted to radiographic pelvimetry and foetal cephalometry. Practically all methods advocated are some form of modification of the procedure proposed by Thoms.⁴⁶ Jarcho²¹ first locates two external landmarks, namely, (1) the upper and anterior border of the symphysis pubis and (2) the interspace between the fourth and fifth lumbar vertebræ. He has the patient sit on the Bucky table instead of re-

clining in the semi-recumbent position so that the plane of the inlet is parallel with the film. The target of the tube is 90 cm. from the film and 5 cm. behind the symphysis. He varies his exposure from 20 to 35 seconds, using 85 K V and 25 Ma. He then replaces the patient with the perforated lead sheet and takes a second exposure on the same film, reading off the exposed dots on the developed negative just as Thoms does. He follows this film with one taken the same way but with the patient in the lateral position. In foetal cephalometry, the rays are centered directly at mid-point between the sinciput and occiput, which are located by external palpation. The rest of the procedure is the same.

Walton⁴⁹ makes use of a false centimeter chart. This chart is obtained by making a series of exposures of a perforated lead plate at various film distances from 1 cm. to 30 cm.; the tube distance being always 30 inches. Having once obtained this chart the use of the lead plate is no longer necessary. He measures the distance from the external landmarks to the film and can then read off the exact measurements on the chart. The advantages claimed by him are: (1) Its accuracy in determining the size of the maternal pelvic inlet and foetal head before delivery, (2) its simplicity, as no special or complicated apparatus is required, (3) all preliminary work can be done by the technician, (4) it takes very little time to compute the measurement after the films are ready for examination. Rowden³⁴ also describes a method of radiographic pelvimetry which is a modification of the Thoms procedure.

Thoms⁴⁷ discussed the diagnosis of disproportion. It depends upon the pelvic and cephalic measurement and also on the consideration of the mother's stature, gait, and physical characteristics and history of previous labors.

GYNECOLOGY

Although the earliest work on the application of roentgenology to gynecology was recorded in 1914, most of the important contributions have appeared in the last decade. However, the roentgenological examination of the female pelvis has passed the experimental stage and few gynecologists can afford to be without this aid. In 1914, Cary⁶ and Dartigues and Dimier⁹ indepen-

dently tried to demonstrate the pelvic organs by injecting collargol but because of the peritoneal irritation this had to be discontinued.

In 1919 Steward and Stein⁴⁵ introduced trans-abdominal pneumoperitoneum as a means of demonstrating the pelvic organs. In 1920 Rubin³⁵ reported his result of successful diagnosis of patency by trans-uterine pneumoperitoneum and this procedure was soon adopted to show the pelvic viscera, particularly by Peterson.³¹ In 1925 Stein and Arens⁴² published their results from the Michael Reese Hospital after having worked on the problem for about three years. Numerous conditions were demonstrated, the true nature of which was not readily apparent on bimanual examination.

In 1923 gynecologists and roentgenologists again began searching for an opaque medium with which to visualize roentgenographically the interior of the uterine cavity. Kennedy²² used 20 per cent sodium bromide. In 1925 Williams and Reynolds⁵¹ used an emulsion of barium and bismuth. Most of these substances produced peritoneal irritation and the method was not readily accepted. In 1921 Sicard and Forestier³⁸ reported the use of Lafay's lipiodol for roentgenological demonstration of various body cavities and it was used for gynecological examinations by Heuser¹⁶ in 1921 and reported in 1924. In 1926 we began using the combined method of pneumoperitoneum and utero-salpinography at the Michael Reese Hospital.⁴³ We found that this gave us the best results as we visualized not only the interior of the tubes and uterus but the peritoneal appearance of the pelvic organs. Stein stated that even the best bimanual and physical examination leads to unnecessary exploratory laparotomies. By the use of the combined method all the viscera are visualized, adhesions demonstrated and the patency of the tubes determined.

TECHNIC

Practically all examiners use lipiodol in preference to other substances as it is the most opaque to the rays and still innocuous. Most of the ill effects of hystero-salpingography (five deaths and thirteen cases with infection in 3,000 examinations—Gauss¹²) have been with substances other than lipiodol. It should be used immediately after

opening the package as it turns brown on standing probably due to liberation of free iodine. The surplus is discarded. The patient is prepared in the usual gynecological procedure and placed in the lithotomy position on a Bucky table. Strict asepsis is followed. A special speculum is inserted. The vagina and cervix are swabbed with iodine or mercurochrome and the cervix grasped with a vulsellum and a special cannula with an olive guard is inserted in the os. About 10 cm. of oil is injected but no undue pressure is applied to the syringe. Stereoscopic prone and lateral views are taken immediately after the injection and a film is taken twenty-four hours later to see if there has been a peritoneal spill. I prefer to give the patient 1/75 gr. of atropine one-half hour before the examination to relieve any spasm that may be present.

For the combined method the procedure is slightly different. The patient is placed on a G. U. table or, as Stein and Arens⁴⁴ propose, a specially built table. If the tubes are patent 1,000 c.c. of CO₂ is injected into the uterus, which is followed by the oil. If the tubes are not patent, the gas is introduced trans-abdominally by means of a spinal puncture needle, the oil injected into the uterus as described above, the patient is turned on her abdomen and placed in reversed Trendelenburg position, and the films exposed. The resultant radiographs reveal the contour of the uterine cavity and tubes and the presence or absence of ovarian cysts, subserous fibroids, tubo-ovarian tumors, adhesions and other changes.

CONTRA-INDICATIONS

The contra-indications are:

1. *Pregnancy.* Although Heuser¹⁶ contended in 1925 that the injection of lipiodol does not produce abortion, recent writers have reported this result with increasing frequency.

2. *Malignancy.* Utero-salpingography has been used to demonstrate the presence of malignant growths in the uterine cavity. There is danger of spreading the cells of the new growth throughout the system. This danger is quite apparent when the few cases of accidental injection of the tubo-ovarian system are encountered. We have had one such case at the North End Clinic in whom fortunately there was no malignancy or acute infection. In the ordinary case no

ill effects result but one can readily realize the possibility of forcing some malignant cells through the vessels.

3. *Time.* One should inject the oil only between menses, as shortly before or after the period the swollen endometrium may prevent the media from passing the uterine ossia of the tubes. Bécère²⁴ and a few other authors noted a reactivation of an old pelvic infection which they believed was due to injecting oil too near the menstrual period.

4. Gonorrhea and acute pelvic inflammatory conditions are contra-indications for the use of utero-salpingography because of the danger of spreading infection, although many writers such as Cotte and Bertrand,⁸ Henkel¹⁵ and Jaroschka¹⁹ report that they have seen no ill effects in this type of patient.

POSSIBILITY OF PERITONEAL IRRITATION

The consensus of opinion among the gynecologists and roentgenologists is that no irritation results from the use of lipiodol although there are a few men such as Rubin and Bendick,³⁶ Odenthal²⁹ and Haselhort¹⁴ who have seen such reactions. I have never seen any harm resulting from this procedure. Usually, the oil is absorbed in a few weeks. In one case I was able to see the oil seventeen months later without any ill effects.

USE OF HYSTERO-SALPINGOGRAPHY

The uses of this procedure are first and foremost the demonstration of tubal patency. It is possible to determine if one or both tubes are patent, provided the element of spasm is removed, and the site of the obstruction. We can also demonstrate certain tumors of the uterus such as submucous fibroids and polyps.

Developmental anomalies can be demonstrated. These may consist of infantile uteri, arcuate or bicornate uteri, double uteri and changes in position such as retro- or anteversion or flexion. Changes in size and shape can also be determined.

Stein and Arens and also Mathieu²⁶ described the appearance of the roentgenogram in hydrosalpinx. Watkins and Menne⁵⁰ performed an interesting experiment as to the location of the site of occlusion of the lumen of the Fallopian tube. Salpingography may also be used to deter-

mine the results of operation for the restoration of tubal patency.

ROENTGEN THERAPY IN RELATION TO GYNECOLOGY

The uses of high voltage, filtered rays and radium in malignant gynecological conditions is well known to all and need no further mention. So, also, is radiation in benign fibromata of the uterus and in benign hemorrhages.

More recently other types of gynecological conditions have been attacked by radiation therapy.

PELVIC INFLAMMATORY CONDITIONS

The late Dr. Polak,³² among others, recently advocated the use of roentgen rays in treating pelvic inflammatory conditions. It is based on the premises that the recurrent cycle of menstruation inhibits the pelvic organs from healing after they have become infected. The purpose is to produce a temporary castration so that the patient is amenorrheic for several months and that the rest thus produced will aid in healing inflammatory conditions. They have noted some very good results. We have tried it at the North End Clinic but found that the output of our machine (125 KVP) was evidently not sufficient to produce a temporary sterility.

OVARIAN AND HYPOPHYSEAL HYPOFUNCTION

During the last six years there has been some work in Europe and this country on the subject of regulating the menses in cases of ovarian and hypophyseal dysfunction. Small doses are given over the pituitary and over the ovaries. The principle is to stimulate the action of the cells of these glands. Of course accurate diagnosis is essential and the cases must be carefully selected. Hirsch¹⁷ studied thirty-eight cases. In twenty-five patients menstruation appeared after the treatment. In four cases this appeared seven weeks after the treatment. In some cases dysmenorrheic symptoms disappeared after the menstrual regulation. Eight of these cases became pregnant. In thirteen cases he failed to obtain results. He concluded that a certain x-ray dosage in carefully selected cases is capable of producing improvement in ovarian function as shown by regulation of the menstruation and the induction of pregnancy with

the birth of healthy children. He believes that nothing is lost by trying this treatment.

CONCLUSIONS

Roentgenology is an indispensable aid to obstetrics and gynecology for demonstrating pregnancy, various types of foetal anomalies, and various changes in the pelvic organs. Roentgen rays are also used therapeutically, 1052 Maccabees Building.

BIBLIOGRAPHY

1. Albano, G.: *Zentralbl. für Gynäk.*, 51:2793, 1927.
2. Albers-Schoenberg: *Zentralbl. f. Gynäk.*, 28:1514, 1904.
3. Arens, R. A., and Bloom, A. R.: *Radiology*, 7:65 (July), 1926.
4. Bouchacourt, L.: *J. de Med. et Chir. Prat.*, 98:469, 1927.
5. Bourland, J. W., and Spangler, D.: *Texas State Jour. Med.*, 20:560, 1925.
6. Cary, W. H.: *Am. Jour. Obstet.*, 69:452, 1914.
7. Case, J. T.: *Surg., Gynec. and Obst.*, 24:312, 1917.
8. Cotte, G., and Bertrand, P.: *Gynec. et Obstet.*, 14:81, 1926.
9. Dartigues and Dimier: *Paris, Chirurg.*, 8:400, 1916.
10. Dorland, W. A., and Hubeny, M. J.: *The X-ray in Embryology and Obstetrics*. Saint Paul, Minn.: Bruce Publishing Co., 1926.
11. Doub, H. P.: *Am. Jour. Roent. and Rad. Therapy*, 14:39, 1925.
12. Gauss: *Zentralbl. f. Gynäk.*, 52:2898, 1927.
13. Greenhill, J. P.: *Med. Clin. of N. A.*, 7:611, 1923.
14. Haselhort, G.: *Zentralbl. f. Gynäk.*, 51:1821, 1927.
15. Henkel: *Ztsche. f. Gebulsh in Gynäk.*, Sonderabdruck, 91, 1927.
16. Heuser, C.: *Rev. Assoc. Med. Argen.*, 37:574, 1924.
17. Hirsch, I. S.: *Surg., Gynec. & Obstet.*, 43:659, 1926.
18. Horner, D. A.: *Surg., Gynec. and Obst.*, 35:67, 1922.
19. Jaroschka, K.: *Zentralbl. für Gynäk.*, 51:1097, 1927.
20. Jarcho, J.: *Amer. Jour. Surg.*, 12:417 (June), 1931.
21. Jarcho, J.: *Amer. Jour. of Surg.*, 14:419, 1931.
22. Kennedy, W. T.: *Am. Jour. Obstet. and Gynec.*, 6:12, 1925.
23. Kehrner: *Zentralbl. für Gynäk.*, 55:2530, 1931.
24. Lecene, Tedeseo, and Bécère: *Bull. Soc. Obst. et de Gynec.*, 18:248, 1927.
25. Levy-Dorn, M.: *Deutsche Med. Wchnschr.*, 23:800, 1897.
26. Mathieu, A.: *Calif. and West. Med.*, 35:73, 1931.
27. Moss, M. N.: *Minn. Med.*, 7:586 (Sept.), 1924.
28. Müllerheim, R.: *Deutsche Med. Wchnschr.*, 24:619, 1898.
29. Odenthal, W.: *Zentralbl. f. Gynäk.*, 51:1824, 1927.
30. Peterson, R.: *Surg., Gynec. and Obstet.*, 33:154, 1921.
31. Peterson, R.: *Am. Jour. Obstet.*, 2:349, 1921.
32. Polak, J.: *Amer. Jour. of Obstet. & Gynec.*, 18:580, 1929.
33. Portes and Blanche: *Gynec. et Obst.*, 10:333, 1924.
34. Rowden: *Brit. Jour. of Rad.*, 4:432, 1931.
35. Rubin, I. C.: *Jour. Am. Med. Assoc.*, 74:1017, 1920.
36. Rubin, I. C., and Bendick, A. J.: *Amer. Jour. Roentg. and Rad. Ther.*, 19:348, 1928.
37. Rucker, M. P., and Whitehead, L. J.: *Jour. Mich. State Med. Soc.*, 27:559, 1928.
38. Sicard, J. A., and Forestier, J.: *Rev. Neurol.*, 28:1264, 1921.
39. Spaulding, A. B.: *Surg., Gynec. and Obst.*, 34:754, 1922.
40. Stein, I. F., and Arens, R. A.: *Jour. A. M. A.*, 81:4 (July 7), 1923.
41. Stein, I. F., and Arens, R. A.: *Radiology*, 7:227 (Sept.), 1926.
42. Stein, I. F., and Arens, R. A.: *Radiol.*, 7:326 (Oct.), 1926.
43. Stein, I. F., and Arens, R. A.: *Jour. A. M. A.*, 87:1299 (Oct. 16), 1926.
44. Stein, I. F., and Arens, R. A.: *Radiology*, 12:341 (April), 1929.
45. Stewart, W. H., and Stein, K.: *Am. Jour. Roent. and Rad. Ther.*, 6:533, 1919.
46. Thoms, H.: *Jour. A. M. A.*, 92:1515, 1929.
47. Thoms, H.: *Surg., Gynec. and Obstet.*, 52:936, 1931.
48. Tousey: *Medical Electricity and Roentgen Rays*. Philadelphia: W. B. Saunders Co., 1921, p. 1067.
49. Walton, H. J.: *Surg., Gynec. and Obstet.*, 53:536, 1931.
50. Watkins, R. E., and Menne, F. R.: *Jour. A. M. A.*, 95:1647, 1930.
51. Williams, E., and Reynolds, R. A.: *Brit. Med. Jour.*, 1:691, 1925.

AN ADULT HEALTH EDUCATION PROGRAM IN WASHTENAW COUNTY

GLADYS J. KLEINSCHMIDT, A.B., M.D.†

Chairman of Health Education Committee of Washtenaw County Medical Society

ANN ARBOR, MICHIGAN

There is a growing tendency for County Medical Societies to assume a certain amount of responsibility for public health efforts in their respective communities. The potential advantages for this arrangement from the standpoint of monetary cost and efficiency are evident. However, it is also admitted that there are arguments against a development of this sort.

Be that as it may, it is pretty certain that an essentially rural adult health education program such as is to be described could only have been carried out by the local Medical Society in coöperation with certain other local agencies.

Approximately a year ago the health education committee of the Washtenaw County Medical Society faced the problem of putting on an educational program with no funds for the purpose and no well-defined scheme of action.

Contact was made with the University Extension Division, who very kindly agreed to pay telephone bills, postage, and traveling expenses incidental to our proposed program.

In order that the various organizations and individuals concerned with this program might have a voice in our plans it was agreed that a larger committee be formed. This committee consisted of a representative of the University Extension Division, the chairman of the Health Education Committee of the Washtenaw County Medical Society, the County Commissioner of Schools, the County Nurse, and a former member of the Health Committee of the Washtenaw County Federation of Women's Clubs who had been making some arrangements for health lectures in the county during the previous year. Future developments will probably indicate that others be asked to join this committee.

A list of suggested titles for health lectures was sent to members of the County Medical Society by the Health Education Committee. The members were asked to state whether they would give their services in this educational program and, if so, to designate the topics they preferred or to list

any other topics of their own choice. A final list of titles was then compiled, mimeographed and copies prepared for distribution. The list of suggested topics for lectures with the frequency that each was selected by those making requests for lectures follows:

TITLES MOST SUITABLE FOR CHILDREN'S AUDIENCES

1. First Aid (Included in the list below)
2. Open Wider Please (Defective Teeth) (Included in list below)
3. Why Think about Eating? (Included in list below)
4. Trudeau and the Battle with Tuberculosis..... 0
5. Edward Jenner, the Conqueror of Smallpox..... 0
6. Pasteur, Discoverer of a World of Microbes.... 5
7. What Did You Say? (Preservation of Hearing) (See list below)
8. Why Wear Glasses? (See list below)
9. Cover Up That Sneeze! (Colds) (See list below)
10. Cosmetics 0
11. Health and Safety..... 1
12. Health in the Schoolroom..... 1
13. Principles of Healthy Living..... 3

TITLES FOR ADULT AUDIENCES PARTICULARLY

1. Conquering Tuberculosis 6
2. First Aid 28
3. Why Think about Eating? (Nutrition)..... 0
4. Dental Facts and Fancies..... 1
5. Health Problems on the Farm..... 1
6. Training the Toddler (Habits of Children).... 0
7. Should Johnny Be Spanked? (Behavior Problems) 2
8. How to Organize for Public Health Work..... 1
9. How Shall I Preserve My Hearing?
10. How Shall I Preserve My Vision?
Requests made for "Eye, Ear, Nose and Throat Conditions" 3
11. The Truth about Nerves and Nervousness..... 1
12. What Shall I Teach My Child about Sex? (Social Hygiene) 19
13. The Heart and Its Handicaps..... 2
14. Cover Up that Sneeze!..... 3
15. A Sound Mind in a Sound Body (Mental Hygiene) 3

†Dr. Kleinschmidt received her A. B. degree at Hope College in 1926; M.D. degree, at University of Michigan in 1931. She interned at the University Hospital, Ann Arbor, Michigan, and has had one year of training in Public Health at the University of Michigan. She is engaged in medical practice in Ann Arbor at present.

16. Care of Sick in Home.....	1
17. What Parents Should Know About Their Children	15
18. Contagious Disease Control.....	6
19. What Science Knows about Cancer.....	1
20. Light, Heat, and Ventilation.....	1
21. The Use and Abuse of Drugs.....	0
22. John Barleycorn Destroys Good Health.....	0

An examination of the list of titles will show that they cover many aspects of the field of health and perhaps no particular objective seems outstanding. A plan of general health education was adopted because no reliable statistics are available of the morbidity and mortality rates in Washtenaw County which would indicate where effort should be concentrated. Further, the county board of supervisors' policy with regard to health matters in the past has diverged rather widely from the policy which would have been adopted by a more health conscious group. In the opinion of some, attitudes have arisen out of past situations which seem to indicate that one should not antagonize by saying too much about the building up of a desirable organization or machinery needed to combat certain problems, but rather to form a groundwork of general information and desirable attitudes which would serve as a basis for future efforts. However, close coöperation with the County Nurse frequently brought to light outstanding health problems in certain communities, which information was used to advantage by the speaker going into that territory.

Although topics appropriate for talks to children were suggested, only requests for lectures to adults were received.

The high incidence of social hygiene lectures may be explained by the fact that a series of fourteen were requested by a women's organization. Undoubtedly the most popular topics were "First Aid" and "What Parents Should Know about Their Children." We are aware of the fact, however, that frequently the choices made were influenced by those doing the work of organization.

The work of organization in the rural community itself was carried out through the combined efforts of Mrs. T. S. Weber, the former health committee member of the Washtenaw County Federation of Women's Clubs, the County Nurse, and the County Commissioner of Schools. When one of these three people entered a school district,

they carried with them copies of the mimeographed list of topics. Contact was made with the local school teacher or members of the district school board in the rural area. If everyone concerned was agreed, a request was made for a lecture and a choice of topic made. This request was sent to the chairman of the Health Education Committee of the Medical Society, who made arrangements for all the lectures. Later in the year, the County Parent-Teachers Association began to facilitate the work of organization by bringing in requests for health lectures for meetings of Parent-Teachers organizations throughout the County.

The people of the district or organization concerned coöperated by making arrangements for publicity and adding such features to their program as they might desire. This might include entertainment by the children of the school, music, refreshments, etc.

After having completed arrangements for a given lecture the chairman of the Health Education Committee of the County Medical Society sent a letter to the key person in the community where the lecture was to be given, introducing the speaker and asking that a report be made of the meeting after it was over. Also, attention was again directed to the fact that future lectures were available by sending requests directly to the chairman of the Health Education Committee, or to one of those people doing organization work in the field.

An attempt was made to send physicians to fill requests coming from their own communities, and, as far as possible, to permit physicians to speak on topics related to their specialties or fields of special interest. As might be expected, the chairman of the Health Education Committee was obliged to do some pinch-hitting occasionally.

In some cases physicians provided their own means of transportation. Where this was not practical, members of the Kiwanis Clubs of Ann Arbor and Ypsilanti provided means of conveyance.

The meetings were held in rural schools as a rule, though speakers were also provided for Grange meetings, Farmers Clubs, Women's Clubs and other organizations. The meetings tended to be informal, and opportunity was usually given at the close of the talk for questions. In some cases talks were illustrated with stereopticon slides

usually provided by the Extension Division. Physicians found suggested outlines for lectures provided by the Extension Division of benefit.

Up to the present time one hundred and four talks have been given by thirty-eight different speakers. There has been a total attendance of four thousand five hundred and three, with an average attendance of forty-four. A large number of lectures arranged for were cancelled because of weather conditions or because C. W. A. activities in schools did not permit meetings to be held there.

Regarding the cost of this program, it might be said that the chief item of expense was the total car mileage of 1,270 miles paid Mrs. Weber for making visits to 93 of the 130 schools in the county. Fifteen days were required to complete these visits. The incidental expenses of postage, telephone bills, etc., probably amounted to less than five dollars.

It is perhaps difficult or even impossible to measure the results of a program of this sort. One might quote extracts from letters

of appreciation received from individuals who have heard these lectures. One might tell of occasional instances where first aid or other information secured through these lectures has been the means of saving life or limb. Also one might tell of hours spent by certain physicians in answering eager questions asked by members of enthusiastic audiences at the close of lectures given. The most far-reaching results, however, will probably be manifested in changed behavior and attitudes.

We believe that programs of this sort are essential to the future progress of the public health movement. § We have passed through the period where environmental sanitation was stressed, also the period of marked advances in the control of communicable diseases, and now future progress is largely dependent on the coöperation of the individual, which can only be secured through health education, which it is safe to prophesy will be the dominant force in the public health of tomorrow.

§Galdston, Iago: Health Education and the Public Health of the Future. Jour. Mich. State Med. Soc., 28: 32-35 (January), 1929.

THE TREATMENT OF IMPETIGO CONTAGIOSA NEONATORUM*

THE "DRY METHOD"

SAMUEL J. LEVIN, M.D.†

DETROIT, MICHIGAN

Sporadic cases of impetigo contagiosa continue to appear between recurring epidemics in most obstetrical institutions despite rigorous precautions.

Swendson and Seymour,¹ following the work of Rood Taylor,² have emphasized the conditions which predispose to infection of the vulnerable skin of the infant. The delicate skin of the newborn is easily injured by energetic bathing with harsh wash-cloths. In addition, excessive warmth due to over-heated rooms or excessive clothes induce perspiration, which facilitates bacterial growth in addition to causing maceration of the skin of the infant. The method in common use, of oiling the skin of the infant daily, is undoubtedly an important factor in preventing loss of moisture. This increases the tendency to microscopic maceration of the skin with invasion of the denuded surface by the

causative organisms of impetigo.

In treatment, these factors should therefore be considered. The use of oily or greasy preparations, useful as they are for impetigo of older children and adults, have been generally disappointing for impetigo of the new born. These preparations tend to spread the infection, as the natural tendency of oily substances is to disseminate over a wide area. In addition, the further maceration of the adjoining skin opens new portals of entry for the infection. With

*From the Detroit Polyclinic.

†Dr. Samuel J. Levin obtained the degree of M.D. University of Toronto, 1923. He was Intern and Resident, Department of Pediatrics, University Hospital, Ann Arbor, 1923-1925; Pediatric Resident, Mount Sinai Hospital, New York, 1925-1926; Instructor Pediatrics, University of Michigan, 1926-1927; Instructor Pediatrics, Detroit College of Medicine and Surgery, since 1927. Dr. Levin is in charge of the Departments of Pediatrics and Allergy at the Detroit Polyclinic.

these considerations in view, the following routine treatment for impetigo of the newborn has been carried out in forty-four consecutive cases. It has been successful in clearing up these cases in seventy-two hours or less, the average duration being forty-eight hours after institution of this therapy.

Treatment.—All mature lesions are opened once or twice a day and the infant immediately immersed for ten to fifteen minutes in a bath of 1-15000 bichloride of mercury and a thorough soap bath given, using a mild castile soap. The following dusting powder (modified from Rood Taylor) should be applied freely following the bath:

Bismuth subnitrate,
Zinc Oxide light,
Calomel; equal parts.

New lesions are opened twice a day and the bath repeated. After the first day only an occasional lesion appears and only one bichloride bath is usually necessary. The bath

should be continued for a few days after the last lesion appears. The dusting powder is applied freely, during this period, to the affected parts. Elsewhere, talcum powder is freely applied two or three times a day, paying special attention to all folds and creases of the skin, such as the neck and groin. Should it be necessary to apply external heat to the infant, this is best done by a light tent rather than excessive clothing of the baby.

The only disadvantage noted in the treatment of impetigo, by the above method, has been one infant in the series who developed a bichloride dermatitis. Such a result can be avoided by discontinuing the bichloride baths as soon as the first sign of erythema appears, which did not occur in this case until a few days after treatment was begun.

BIBLIOGRAPHY

1. Swendson, James J., and Seymour, R. Lee: *Jour. Amer. Med. Assoc.*, 96:2081, 1931.
2. Taylor, Rood: *Amer. Jour. Dis. Chil.*, 38:439, 1929.

PAPILLOMATA OF THE LARYNX WITH CASE REPORTS

B. F. GLOWACKI, M.D.†

DETROIT, MICHIGAN

The persistent tendency of laryngeal papillomata to recur has prompted the introduction of a multiplicity of methods of treatment. To evaluate properly the merits of each method, the ultimate results must be studied. Not so many years ago extremely radical procedures, like thyrotomy, electrocauterization, fulguration and radium application, have been employed—and now discarded—in the attempt to combat the frequent recurrences of the papillomata. A suggestion is offered to regard this condition as extremely obstinate to treatment and requiring many months of observation, of patient study and of perseverance in a conservative method of treatment.

Two features of papillomata of the larynx mark them as something more than just benign growths. The small masses crowding the diminutive larynx of a child form a mechanical obstruction to respiration which is alarming. Again, the transmissibility of the growth from one site to another clinically stamps the disease as relatively malignant.⁴

Recurrence of papillomata in children is

invariably the rule even after the most painstaking and thorough removal. The method of choice, therefore, in their eradication must be such as to best preserve the delicate functions of the larynx and ultimately to give the patient a clear voice. It must be a method which can be repeated without too much shock to the little patient. Surgical avulsion of the growths without injury to the underlying laryngeal tissues is the method of choice. The list of medications tried topically is endless, and more recently the internal administration of magnesium oxide has been revived³ since its first introduction by Claoué in 1911.¹

I would like to cite two reports which

†Dr. Glowacki is a graduate of the University of St. Louis School of Medicine, 1921. He served as interne and resident at the St. Louis City Hospital, St. Louis, Missouri, and pursued post-graduate study in Ophthalmology and Otolaryngology at several European centers, 1923-1926. He is a Fellow of the American Academy of Ophthalmology and Otolaryngology and Attending Otolaryngologist at Providence Hospital, Detroit.

emphasize the importance of conservative measures and patient observation.

Case 1.—V. B., aged two years and two months. Mother says her daughter cannot cry audibly and will not speak because of a very hoarse voice. In September, 1928, numerous papillomata were extracted from the larynx. For six months the voice was clear; then hoarseness ensued again. In April, 1929, the growths were again removed by direct laryngoscopy, and a month later the recrudescence necessitated another operation.

Only a short period of relief was obtained and the patient became dyspneic for the first time: this was in June, 1929. Examination of the larynx disclosed the numerous papillomata crowding and overlying all the landmarks. A tracheotomy was performed, but the papillomata were not touched. The child had lost weight and suffered a set-back physically the last few months and attention was now centered upon improving her.

Close observation of the patient was maintained for over two years, and it was gratifying to see the papillomata shrivel away due to the improved physical condition and the physiologic rest of the larynx. Gradual decanulation was begun and in December, 1931, the tracheotomy tube was removed entirely.

Two more years have now elapsed. The patient possesses a clear voice, is in vigorous health and is able to maintain her standing in school with other children of her age.

Case 2.—C. D., aged two years. Since the age of seven months the patient had been treated for colds and hoarseness. Cough sedatives improved his condition but his sleep has always been very restive and fitful. Recently his dyspnea has become more severe.

On physical examination the child appeared extremely pale and emaciated with an excited facies. When resting the dyspnea was noted to be mostly inspiratory but definitely labored. Upon crying, the voice was hoarse, in a few seconds a laryngeal spasm would occur, the child holding its mouth open widely, but no inspiration occurred. Soon this exciting phase resulted in complete relaxation of the entire body, when respiration would again be resumed with the release of the laryngeal spasm.

Direct laryngoscopic examination was performed and papillomata were seen scattered over the entire larynx, the cords, the ary-epiglottic folds, and the epiglottis. No further operative procedure on the larynx was contemplated until the general physical condition of the patient improved. Magnesium oxide was ordered daily, in ascending doses.

Unobstructed breathing was obtained by performing a tracheotomy under local anesthesia. This was on June 19, 1932.

Over a period of one year, several direct laryngoscopic examinations (no surgery) were made, but there seemed to be no change in the growths obstructing the larynx. However, neither was there an increase in size nor did new growths spring up in previously unaffected areas. In the meantime, the child doubled in weight; its color returned. The breathing through the tracheotomy tube was free during rest and play. No further reliance was placed on the magnesium oxide and surgical extraction of the papillomata was instituted.

Summing up the facts about the different methods of treatment of papillomata of the larynx in children, it must be noted that rest to the larynx is important as exemplified in Case 1. The only external laryngeal operation practiced was tracheotomy, and then only when the dyspnea necessitated it.

An opportunity of examining three patients where careful electrocoagulation was used in destroying the growths revealed such extensive stenosis that a tracheotomy tube will have to be worn permanently. This method is not recommended.

No therapeutic importance could be attributed to the use of magnesium oxide (Case 2), although several encouraging results have been reported by others.

Direct application of radium has not been beneficial; on the contrary, severe edema, perichondritis and necrosis have followed.²

Repeated removal of papillomata after preliminary tracheotomy, if necessary, together with attention to the general physical condition and needs of the patient, offer the most promising results.

770 Maccabees Bldg.

BIBLIOGRAPHY

1. Claoué, R. *Ann. Des Maladies de l'Oreille*, 36:11, 1911.
2. Clerf, Louis H. *Transactions of the American Academy of Ophthalmology and Otolaryngology*, 1932. Page 335.
3. Katz, Benjamin: Treatment of papillomas of the larynx with calcined magnesia. *Ann. Ot., Rhin. and Laryng.*, page 202 (March), 1932.
4. Thomson, Sir St. Clair: *Diseases of the Nose and Throat*. Second Edition. London: Cassell and Company, Ltd., 1921. Page 520.

THE ENDURING ACHIEVEMENTS OF SIR CHARLES BELL

HENRY W. WOLTMAN, Rochester, Minn., in discussing the life and work of Charles Bell, states that it was not only Bell's determined wish to carry forward the work of the Munros and the Hunters but that he felt that it was also his duty, and that he not only toiled industriously but with an all-consuming passion. Like the other Scots of London he achieved fame, and he shared their traits. The

author presents the salient points, as he sees them, from Bell's "Idea of a New Anatomy of the Brain." Herein Bell anticipates the later discoveries of cerebral localization. He states clearly what is now referred to as "the doctrine of specific nerve energies." The author discusses further Bell's various achievements in the physiology of the nerve system: Bell's palsy, external respiratory nerve sign, muscle sense and Bell as teacher and clinician.—*Jour. A. M. A.*, Aug. 18, 1934.

THE JOURNAL

OF THE

Michigan State Medical Society

PUBLICATION COMMITTEE

F. A. BAKER, M.D., Chairman.....Pontiac
A. S. BRUNK, M.D.....Detroit
J. EARL MCINTYRE, M.D.....Lansing

Editor

J. H. DEMPSTER, B.A., M.D.
5761 Stanton Avenue, Detroit, Michigan

Business Manager

B. R. CORBUS, M.D.
2642 University Avenue, St. Paul, Minnesota, and
313 Metz Building, Grand Rapids, Michigan

OCTOBER, 1934

EDITORIAL

AN EDITOR ERRS

In the August number of the *Illinois Medical Journal* there appears a rather vituperative editorial whose theme is the report of the Committee on Economics of the Michigan State Medical Society. The brunt of the attack is directed against Dr. Nathan Sinai, director of study, and spreads out into an attack on the Michigan State Medical Society and the University of Michigan.

Rather mildly we might call attention to the breach of ethics involved in one unit of organized medicine making, through its official publication, such an unwarranted attack on another unit, especially at a time when organized medicine should pull together. More emphatically Michigan resents the report of the Committee on Economics being styled "Sinai's Health Scheme." It resents for Mr. Sinai the suggestion that he is controlled by the Milbank Fund, and that somehow he has managed to insinuate himself into a position of control of not only the Medical Economics Committee, but the Michigan State Medical Society. The acceptance of this as a fact, or as even a partial fact, would place the members of the Economics Committee in the position of being either mentally incompetent or figureheads and the House of Delegates as acquiescent. The Committee on Economics unquestionably represents as high a

grade of mentality as is to be found in the Michigan profession or in that of any other state. Naturally they required a director of study but at all times The Committee dominated the situation.

We do not at all object to a criticism of the plan. It would be equally proper to question the basic facts as presented, certain though we are that they can be substantiated. The editor of the *Illinois Medical Journal* should know that the plan as presented has not been accepted by the Michigan State Medical Society. It is being presented to the House of Delegates as this JOURNAL goes to press. There is a difference of opinion among the profession of Michigan as to the advisability of placing this plan in operation. There is a question in the minds of some of us as to whether the plan is practical, but the point is that, with great sincerity and with the free expenditure of society funds, Michigan has attempted to do a bit of constructive work. The evidence is conclusive that Michigan has had the vision to foresee coming events. We would wish that other states might do a similar bit of research if only to serve as controls of Michigan's results.

There is an old adage that people in glass houses should not throw stones. Michigan is proud of the cleanliness of its profession. We are pleased that we remain singularly free from the type of medical practice which is prevalent in states which, like Michigan, have a large center of population. Rank commercialism by groups and individuals with exploitation through the newspapers is now, and has been, rare in Michigan, not unheard of it is true, but perhaps less at this period when other states are having a great increase in this sort of thing, than at any time in Michigan's history.

B. R. CORBUS, *Acting Secretary*

THE STATE BOARD OF REGISTRATION IN MEDICINE

The Michigan State Board of Registration in Medicine under the secretaryship of Dr. J. Earl McIntyre has been pursuing its work quietly and unobtrusively so that many physicians in the actual practice of their profession are scarcely aware that there is such an institution. Time was when certain comment was directed towards the alleged lack of necessity for such a constituted body. That was back in the times of

generalized prosperity when it was felt in many quarters that a diploma from either one of our two Class "A" medical schools was sufficient guarantee of the candidate's eligibility to enter the practice of medicine. When institutions such as the University Medical School or the Detroit College of Medicine and Surgery endorsed a candidate, that was thought to be sufficient.

The situation at present, however, is different. There is a great clamor from applicants outside of this State to enter the practice of medicine in Michigan in competition with an already congested condition. Many of these applicants are from abroad, that is from Europe, where circumstances surrounding medical practice are anything but desirable. The secretary is besieged almost daily with applicants for license to practice in Michigan, the admittance of whom would already add to the crowded condition which prevails here. The Michigan State Board of Medical Registration has therefore taken on a new function, or, better, it has been compelled to lend emphasis to an old function, namely, regulation of the number of admissions from outside the State. The administration rules of the Michigan State Board of Registration in Medicine demand that applicants for a Michigan license must fulfill certain requirements; among them, the most objectionable to the foreign applicant is that requiring one extra year in a Class "A" medical college in the United States and one year of rotating internship in an approved American hospital. We are informed that there has been a persistent request to waive this rule, which regulation has been sustained by the Attorney-General's Department of the State. Of course it will at once appear that to grant special favors to special applicants would pave the way for all kinds of trouble with others who would seek to practise in this state without meeting the demand of rule No. 15. To let down the bars to foreign physicians would aggravate the condition under which the state is laboring in regard to the ratio of physicians to population. Furthermore it would be an injustice to young graduates of our two Class "A" medical schools, the University of Michigan and the Wayne University, who, after a strenuous and expensive course of study, must seek their fortunes, so to speak, amid conditions unfavorable as they prevail here today.

In addition to the annual and semi-annual

examinations and the regulation of licensing graduates from other states, at home and abroad, the matter of discipline is also a function of the Board. In every state there are medically trained men, few we hope, who are guilty of conduct that is at variance with good medical ethics. The majority of these are perhaps handled satisfactorily by ethics committees of the various county medical societies. The graver offences, however, must be dealt with by the Board of Medical Registration, which has certain powers over the licensing of all physicians within the state. The board endeavors to deal with these cases with as much wisdom as a body of men can exercise, endeavoring to have in mind the good of the public and the profession as well as the person at fault. An endeavor is made to exercise these powers with justice and without malice.

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

The annual educational number of the *Journal of the American Medical Association* always contains interesting data on the subject of medical education; much of it is in condensed tabulated form. Here are a few interesting facts gleaned almost at random. In eleven medical colleges the general fees are \$500 and over; in three the fees are less than one hundred dollars (\$100.00). In twenty-three colleges they range from two hundred dollars (\$200.00) to three hundred dollars (\$300.00).

There are (1933-1934) 1,428 American medical students enrolled in eighty-four medical schools in Europe, China and South America.

There are 5,488 physicians listed for Michigan in the American Medical Directory (1934), which is one for every 919 of the population. In the United States there is one physician to 814 people. The District of Columbia has one physician for 290 people.

The 1934 Medical Directory contains statistics on the number of physicians who either limit their practice to, or declare a special interest in, a specialty. The largest number is 4,452 in internal medicine, followed closely by the next largest, 4,337 in surgery. Otology, laryngology, rhinology and ophthalmology as a group come third with 4,010. Thirty-four limit their work to

bacteriology. These statistics are of those who definitely limit their practice to the exclusion of everything else. There are 8,854 apart from the surgical specialists who declare a special interest in surgery. The obstetric specialists number 356 while 2,001 declare a special interest in obstetrics.

In the year 1905 there were one hundred and sixty medical schools in the United States which graduated 5,606 that year. In 1934 there are seventy-seven medical schools which graduated 5,038 doctors.

In 1934 there are 1,020 women students in American Medical Schools, with 211 graduates, or 4.2 per cent of all graduates.

The two Class A schools in Michigan have an enrolment (1934) of 775, with 164 graduates.

THE HISTORY OF NURSING

Specific references to early nursing are very scarce. It seems logical to suppose that primitive mothers instinctively cared for their children and that some of the older women acquired a slight knowledge of medicinal herbs and plants. The old crone with her brews and incantations was probably the first to combine the duties of both physician and nurse, prescribing for the sick as well as attending them. In the pre-Christian centuries, although there are references to hospitals and medicine, little direct mention is made of nursing. Among the Greeks, Egyptians, Romans and Jews, most, if not all, nursing was done by the women of the household, assisted, in some cases, by slaves or servants. Little provision was made for the care of the ailing poor except among the Jews, who observed the Mosaic Code, and among the Indians, who, because of the Buddhistic doctrines of reincarnation, feared that the soul of a friend or relative might be imprisoned in the body of a sick beggar. The early Indian records contain the most valuable references to nursing, which was performed almost wholly by males. From the *Samhita* (compendium) of Shusruta in the fourth century comes the following interesting passage:

"Nurse.—That person alone is fit to nurse or to attend the bedside of a patient who is cool-headed and pleasant in his demeanour, does not speak ill of anybody, is strong and attentive to the requirements of the sick, and strictly and indefatigably follows the instructions of the physician."

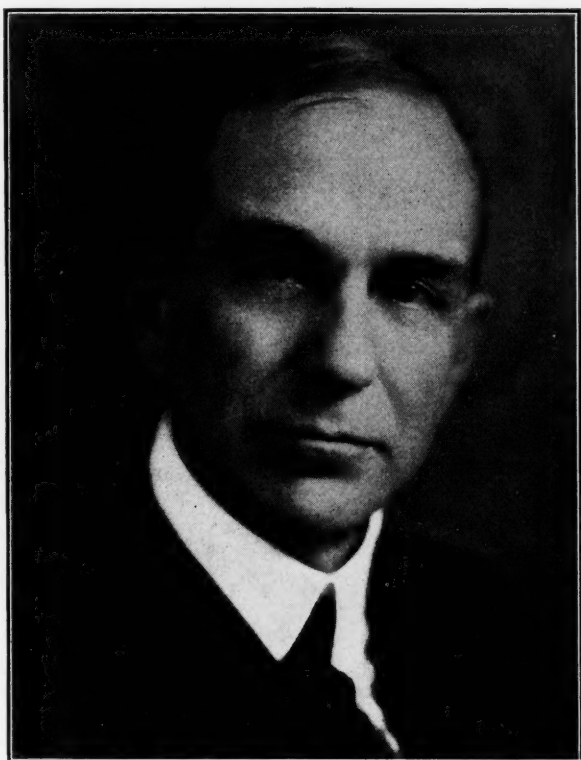
To these qualifications may be added others from the *Charaka-Samhita* of the same century:

"Nurse.—Knowledge of the manner in which drugs should be prepared or compounded for administration, cleverness, devotedness to the patient waited upon, and purity (both of mind and body) are the four qualifications of the attending nurse."

One cannot help but wonder at the amazingly high standard set for nurses at that time—a standard which could scarcely be improved today. In fact, the care of the sick in the pre-Christian era compares favorably with many succeeding periods.

With the advent of Christianity, women, particularly unmarried women, were given greater opportunities for social service on a varied scale. The earliest Christian nursing orders were the Deaconesses, Widows and Nuns, of whom the first occupied a position of great importance. The early Deaconesses were ordained by the church and had duties both secular and religious, among which care for the sick and poor was predominant. The order of Deaconesses spread rapidly into Syria, Italy, Spain, Gaul and Ireland. It was strictly ecclesiastical, with the selection and control of members lying in the hands of the Bishop; even women of wealth and nobility were grateful for the opportunity of entering the Diaconate, with the result that an exceptionally high standard was set for the group. The Deaconesses, however, had been given too large a sphere of activity, and their influence came to be strongly opposed by the clergy, so that in 251 the Roman parishes abolished the order. Nevertheless, the Deaconess continued in the East until the eighth century, although her power had gradually diminished after the fourth century, when it had reached a peak. The order of Deaconesses is of particular importance since it may be considered to have laid the foundation of nursing.

As the order of Deaconesses declined, its work was absorbed into other organizations, particularly by other religious groups. The church founded separate hospitals for men and women, and frequently these double establishments were presided over by abbesses of great influence. Among these were Radegund of Poitiers, Hilda at Whitby and Hildegard at Bingen. Such women had great administrative ability and were



DR. RICHARD R. SMITH

(President of the Michigan State Medical Society 1934-1935)

An editorial appreciation of Dr. Smith appeared in this JOURNAL a year ago on the occasion of his election by the House of Delegates to succeed Dr. George L. Le Fevre. The choice of Dr. Smith fully justifies the wisdom of his election at a time when a strong man is needed at the helm. His interests are many and varied; among them education holds a prominent place, particularly important at this time when there is such a strong incentive among the profession for post-graduate medical instruction. Dr. Smith has been early and intimately identified with the American College of Surgeons and has had a great deal to do in the standardization of hospitals. Elsewhere in this JOURNAL appears Dr. Smith's address in response to his induction as president of the Society. He has consented to address the Society from time to time by signed editorial communications.

often very learned. Hildegard, for example, wrote two large works: one upon natural history to furnish a background for medical study, and a second upon symptoms and treatment. Her work is of particular interest in indicating that nursing among religious orders had reached a fairly high level by the twelfth century. This same century also saw a definite separation beginning to take place between the establishments for the sick and those for the poor, though the sick were still largely under the jurisdiction of the church. Contemporaneously with these developments arose vari-

ous nursing orders which may be roughly classified as military, secular and religious.

The military orders sprang up to meet the exigencies of the Crusades. Their duties were a combination of war-making, charitable relief and hospital nursing under re-



DR. GROVER C. PENBERTHY

(President-Elect Michigan State Medical Society)

Dr. Penberthy is a native of Michigan, born at Houghton on March 1, 1886. His early education was obtained at the Houghton High School and his medical training at the University of Michigan, where he was graduated in 1910. His internship was served at the New York City Hospital 1910-13. He came to Detroit in 1913, where he has been in practice to the present time. He was in the army from 1917 to 1919, where he performed the duties of military surgeon. Dr. Penberthy is associate professor of surgery, medical school of Wayne University, and non-resident lecturer of the Medical Department of the University of Michigan; he is also extramural lecturer, post-graduate school of the University of Michigan. His hospital appointments include that of Surgical Director of the Children's Hospital of Michigan; Associate Surgeon Harper and Herman Kiefer hospitals, Detroit; Surgeon Michigan Mutual Hospital; Consulting Surgeon Detroit Receiving Hospital. Dr. Penberthy is past-president of both the Detroit Academy of Medicine and the Academy of Surgery. Besides the successful pursuit of his professional duties Dr. Penberthy has found time to devote to the interests of the profession of both Wayne County and the State of Michigan, and when the time comes, a year hence, to occupy the president's chair, he will bring to his new duties an experience that will be invaluable to the Michigan State Medical Society.

ligious forms. The Order of St. John became important after the capture of Jerusalem in 1099. The members rapidly gained power, and wealth and honors were showered upon them. The Teutonic Knights, dating back to 1128, and the Knights of St. Lazarus, first organized to care for lepers, were also important. Women's groups were organized simultaneously and these too were widespread and influential. The chief significance of the military nursing orders was that the glamor spread about them attracted the patronage of the noble and wealthy and greatly stimulated the founding of hospitals.

Secular nursing orders became very active early in the thirteenth century. Orders, such as the Tertiaries, existed outside the church, but were usually under its jurisdiction. Other important secular groups were the Order of the Holy Ghost, founded toward the end of the twelfth century, the Oblates, an order of women in Florence, and the Béguines, founded in Belgium in 1180. The last group in 1300 had over 200,000 members, including men and women, who served in hospitals and also did visiting nursing.

Of the religious orders, most is known about the Augustinian Sisters, one of the oldest purely nursing orders, at the Hôtel Dieu in Paris. These Sisters were in charge of the female section of the hospital and, in addition, were responsible for the laundry, household management, kitchens, etc. They lived a very secluded life, only leaving the hospital to do nursing. It may thus be noted that practically all organized nursing had a definite relationship with the church, either in inspiration or jurisdiction, a condition which continued until the latter half of the nineteenth century.

The sixteenth century saw renewed activity within the church itself. Foremost among the new orders were the Brothers of St. John of God, founded in Granada in 1540, and the Sisters of Charity in France.

The period from the end of the seventeenth to the middle of the nineteenth century is generally considered the "Dark Period" of nursing. During this century and a half, little progress was made, and there were actual cases of deterioration. The Reformation and the Renaissance seem to have had little effect upon nursing except that the confiscation of church property

necessarily abolished many church hospitals. Medicine, to be sure, had received a great impetus with the renewed interest in science, but since nursing was more closely associated with religion than with medicine, there was no commensurate improvement. Especially disgraceful were conditions in England and the United States where there were no religious organizations, although, even in Europe, the Sisters were hampered by antiquated routines.

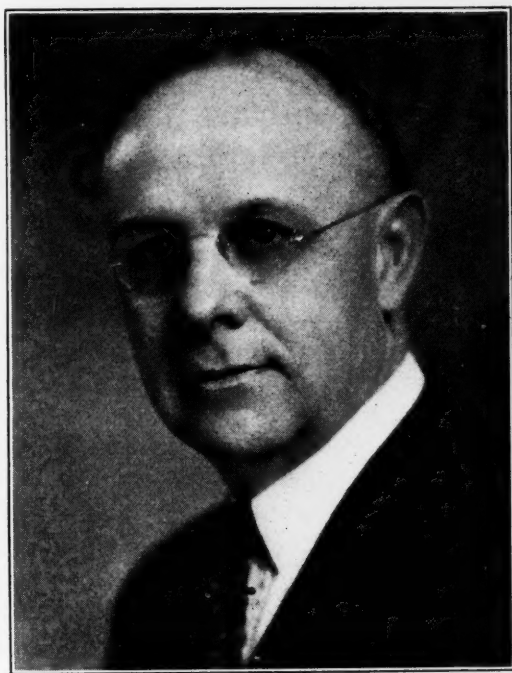
The deplorable conditions of nursing were becoming more and more obvious. Such reformers as John Howard during the eighteenth century and Elizabeth Fry during the first half of the nineteenth century agitated for nursing reform along with prison and hospital reform. One of the most important factors in the regeneration of nursing was the founding of the Deaconess Institute at Kaiserwerth by Pastor Theodor Fliedner in 1836. This was a revival of the ancient order of Deaconesses and branches soon spread outside of Germany. Kaiserwerth is of particular interest, because Florence Nightingale spent three months of training there, really the only systematic training she ever received outside of a few weeks spent with the Sisters of Charity in Paris.

Contemporaneously with Kaiserwerth, several sisterhoods in the Church of England were also founded with nursing as their primary object. The women received no training and none of these Anglican orders can properly be associated with reform in hospital nursing, because their work was solely among the poor. Hospital nursing reform is connected with St. John's House, in particular, and All Saints Sisterhood. The founding of the former in 1848 was an important landmark in nursing history since it was the first purely nursing order in the Church of England. Provisions were made for a group of nurses to receive training for two years, after which, if they were approved, they became "Nurses," receiving board, room and a small salary, and were bound to remain for five years.

One of the most original and interesting attempts to ameliorate nursing was the founding and endowing of "La Source" at Lausanne, Switzerland, in 1859 by Countess Agénor de Gasparin. She founded it largely as a protest against the "motherhouse" system, because she believed in the right of

each individual to enjoy personal liberty and to receive a salary.

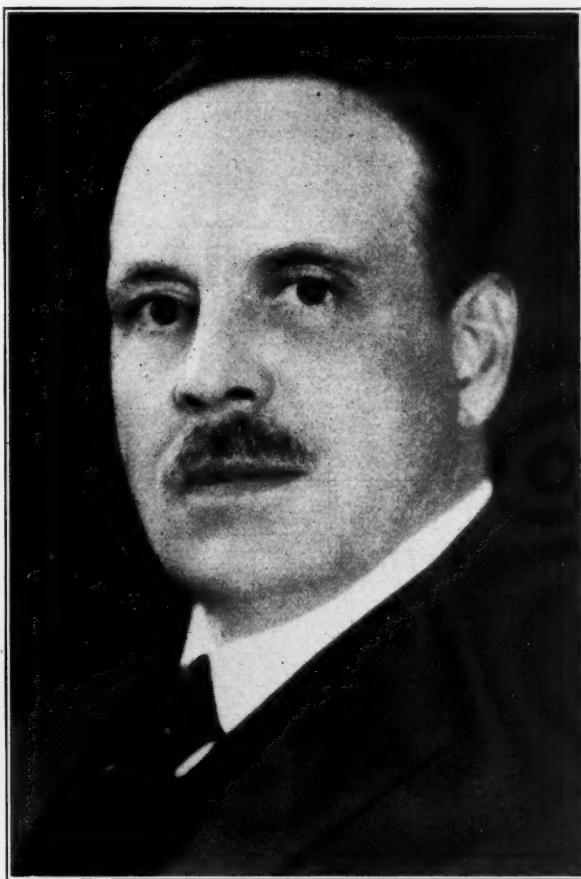
The establishment of the principles of modern nursing is attributed to Florence Nightingale. Although her theoretical training was negligible, Miss Nightingale had seized every opportunity during extensive travels to visit hospitals and observe nursing so that when the opportunity for service presented itself she was fully prepared. In October, 1854, Miss Nightingale with a small group of nurses was sent to Scutari to assist in the nursing during the Crimean War. Her remarkable achievements in the face of insurmountable difficulties and her



DR. JULIUS H. POWERS

(Newly elected Chairman of the Council of the Michigan State Medical Society)

Dr. Julius H. Powers of Saginaw, councillor of the Eighth District Michigan State Medical Society, has been elected chairman of the Council to succeed Dr. Burton R. Corbus, who in turn succeeds Dr. Warnshuis as secretary of the Society until a permanent appointment is made at the next meeting of the Council in January. Dr. Powers has been a member of the Council for over ten years. Dr. Powers is a native of Iowa, in which State he received his early education, graduating Bachelor of Philosophy from Grinnell College in 1901. Two years later he received the degree M.A. Following his academic training he attended the University of Michigan Medical School and was graduated M.D. in 1906. Following graduation he located in Saginaw, where he has been in practice to the present time. Dr. Powers has given special attention to general surgery. He has taken courses in surgery at the University of Michigan and at Harvard. He leaves shortly for post-graduate work in Vienna, Austria.



DR. BURTON R. CORBUS

(Acting Secretary of the Michigan State Medical Society)

Dr. Burton R. Corbus became acting secretary to succeed Dr. Warnshuis until a permanent appointment is made at the winter meeting of the Council of the Society. Dr. Corbus' long experience as councillor and as chairman of the Council and Executive Committee eminently qualifies him for the new duties he has undertaken. He has a clear working command of parliamentary procedure, and probably no other member of the Society is better acquainted with the problems that confront the members of the medical profession today.

innovations in nursing, sanitation and administration are well known. It is certainly not strange that she became a kind of popular heroine upon her return to England in 1856. Since she would accept no personal testimonial of any kind, it was decided to establish a fund to enable her to found a nurses' training school. However, her health would not permit her to undertake the project directly, so that a subcommittee was appointed, and St. Thomas's Hospital was selected as a starting point. The first fifteen probationers were admitted in June, 1860. Miss Nightingale was consulted at every stage, but the actual respon-

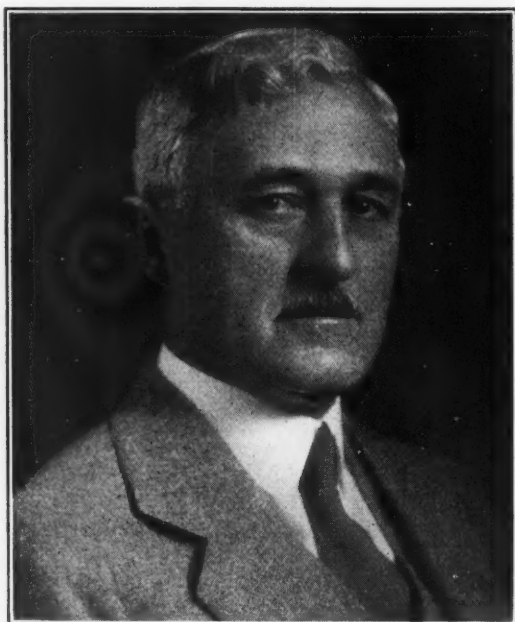
sibility was necessarily assumed by the superintendent, Mrs. Wardroper, to whom much credit is due. Miss Nightingale's chief contribution to nursing was her insistence upon the necessity for training. She also caused people to realize that nursing de-

eral Hospital at Boston. By 1890, trained nursing had established its worth and proved its value to the medical profession. As the importance of training came to be more fully appreciated, the curriculum in the training schools was extended and improved.

The Nightingale School and other early schools had provided only a year of nursing training, which included a variable number of lectures on phases of nursing, taking temperature, counting pulse and respiration, and bandaging. The period of training and the scope of study were gradually increased until, in 1910, the University of Minnesota introduced a five year course of training leading to a Bachelor's degree in Nursing. This curriculum comprises two years of pre-nursing preparation, two years of professional training and one year of combined general and specialized work. Postgraduate work has also made tremendous strides during the past thirty years, permitting nurses to specialize in particular fields and to keep their knowledge up to date.

A new motive for nursing—patriotism—was provided by the Red Cross movement. The idea of the association was conceived by Jean Henri Dunant, who introduced it at an international conference in 1863. The following year, twelve countries adopted the plan, which provided for the formation of National Aid Societies which, in time of war, were to be put under military rule and to be assured of universally respected neutrality; in time of peace, they were to assist during emergencies (such as earthquakes and floods) and to promote public health. The United States did not ratify the plan until 1882, since the Civil War and reconstruction had been foremost at the time of the inception of the Red Cross idea. In 1919, the League of Red Cross Societies was formed and, by 1931, fifty-eight nations had become affiliated with it.

Probably, the most important development in nursing since the World War has been public health nursing, which covers a great field of work: bedside care, school nursing, industrial nursing, tuberculosis care, child welfare, mental hygiene and venereal disease work. Public health nursing may be either a part of the regular training course or it may be acquired during postgraduate work. Some few countries,



DR. H. A. LUCE

Dr. Henry A. Luce of Detroit has been re-elected as chairman of the House of Delegates of the Michigan State Medical Society and he has been elected also as a delegate to the 1935 annual meeting of the American Medical Association at Atlantic City.

served to be raised to the status of a profession. Finally, from the time of Miss Nightingale, nursing was extended beyond the limits of religious organizations with the result that it became more closely connected with medicine.

The Nightingale system of training nurses spread throughout the world. Women from various countries came to England to receive training which would enable them to establish similar institutions in their own countries. Changes in administration and method were introduced, but the general idea behind the schools remained the same.

In 1872, the first nurses' training school was inaugurated in the United States at the New England Hospital for Women and Children at Roxbury, Massachusetts. The following year, schools were established at the Bellevue Hospital, New York, the New Haven Hospital and the Massachusetts Gen-

such as Italy and France, have special schools for this training.

Another field of nursing which is of recent development is psychiatric nursing. The first organized course of lectures and training in mental nursing were given at the McLean Hospital in Boston in 1882, followed by lectures at the German Institute at Arnsdorf in 1884. Training is either specifically for work with the insane or may be in connection with the regular course of study. Even today, however, many countries, such as China, Bulgaria and Greece, have no definite instruction for attendants of the insane. Probably in time, all nurses will be required to have training in mental cases and then greater work along preventive and early treatment lines can be done. Prison nursing is another relatively recent development and one which is still in its infancy.

The past century has witnessed a remarkable advance in nursing. From the deplorable type of woman characterized by Dickens in Mrs. Sairey Gamp, the modern nurse has developed into an educated, efficient and admirable individual.

DR. JOHN E. CLARK

The late Dr. John E. Clark of Detroit was one of those men prominent in the medical profession, who, despite his four score and four years, was never looked upon as an old man. He was a vigorous and youthful octogenarian with a sustaining philosophy of life and a sense of humor that assured a welcome in any group. He was an excellent teacher, always interesting, and gifted with the ability to inspire others with the love of his subject. Dr. Clark was a friend of the younger man in the struggle period of the practice of medicine. For him he had always a word of encouragement and his optimism was boundless. His long experience as County Chemist developed his powers as expert witness excelled by few. He was a member of the senior group of the Wayne County Physicians organized some time ago, always welcome and whimsically facetious when he arose to address the group. It is the lot of few men to live a life so full of vigor, good cheer and service.

ANALYSIS OF FOOTBALL INJURIES

THOMAS N. HORAN, Bloomfield Hills, Mich., presents a study which includes a record of major and

minor injuries through four consecutive seasons at Cranbrook School, where 80 per cent of the boys play football and where the average school attendance is 200. The analysis of the injuries is taken from notes entered each afternoon and evening during the season. These injuries are summarized in tables and presented pictorially. The total number of injuries decreases: 243 in 1930, 112 in 1931, 68 in 1932 and 75 in 1933. This interesting reduction developed gradually as the causes for special regional injuries were examined in respect to the anatomic strength or vulnerability of the part, the character and direction of the force inflicting the injury, the distribution of padding (cotton, wool, sponge rubber and leather) within the uniform, and the style or form in play. The most serious injuries in 1930, 1931 and 1932 included a fracture of the second lumbar vertebra, a kidney blow with gross hematuria, evulsion of bone within the knee joint at the attachment of a cruciate ligament, cerebral concussion, and severe strain of the internal lateral ligament of the knee. In 1933 there were no serious injuries.—*Journal A. M. A.*, Aug. 4, 1934.

AUTUMN

There is something in the autumn
That is native to my blood,
Touch of manner, hint of mood;
And my heart is like a rhyme,
With the yellow and the purple
And the crimson keeping time.

The scarlet of the maples can shake me
Like a cry
Of bugles going by,
And my lonely spirit thrills
To see the frosty asters like smoke
Upon the hills.

There is something in October sets
The gypsy blood astir;
We must follow her,
When from every hill a flame
She calls and calls each vagabond by name.
BLISS CARMEN.

ENDOCRINE DWARFISM

WILLIAM ENGELBACH and ROBERT L. SCHAEFER, Detroit, believe that the problem of diagnosis and treatment of statural undergrowth, or dwarfism, rightfully belongs to the general practitioner and pediatrician. One has but to study the normal growth increment curve in the human being for this proof. It testifies to the fact that approximately 50 per cent of the total growth has been attained at the age of three years. Its increasing plateau diminishes rapidly as adolescence or sex maturity is attained. It logically follows that diagnosis and adequate treatment during the infantile and early juvenile periods should give greater therapeutic results. The work of Smith indicates that thyroid extract is a valuable adjunct in this form of treatment. The cases giving the most favorable response display a delay in roentgenographic study of osseous development.—*Journal A. M. A.*, Aug. 18, 1934.

COMMUNICATION

To the Editor: Just read your article regarding the retirement of old physicians on a pension. I am very much in favor of the plan presented and would like to see it brought about.

GEO. R. WRIGHT.

Montrose
September 4, 1934

DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

ACTING SECRETARY

Beginning with this issue this department has a new editor, the acting secretary. For ten years chairman of the council, he has good reason to know the load that the secretary of this Society must carry. Much is expected and required. Doctor Warnshuis has met these requirements with exceptional ability and conscientiousness.

There is a wealth of detail incident to the proper conduct of the Society's business. It is not alone the routine of maintaining contact between the general office, county units and individual members, but there is much correspondence from both within and without the state. Last year 8,958 pieces of first class mail were sent out from the office and 6,000 came in.

In addition there is the business management of THE JOURNAL. There are frequent meetings with committees and a certain amount of field work.

Doctor Corbus hopes that you will be tolerant with his errors of omission and commission during this interval period. In every possible way your acting secretary will endeavor to be of help to you. He hopes that you will frequently call upon him and he asks for your coöperation and encouragement. Please remember the new address—313 Metz Bldg., Grand Rapids, Mich.

HIGH LIGHTS OF THE ANNUAL MEETING

Your officers for 1934-35 are:

Dr. Richard R. Smith, President—Grand Rapids

Dr. Grover C. Penberthy, President-Elect—Detroit

Dr. Henry A. Luce, Speaker of the House—Detroit

Dr. Frank H. Reeder, Vice Speaker—Flint

Delegates to the American Medical Association:

Dr. J. D. Brook—Grandville

Dr. H. A. Luce—Detroit

Dr. C. S. Gorsline—Battle Creek

Dr. C. Keyport—Grayling

Dr. Hirschman holding over

Alternate Delegates:

Dr. T. E. DeGurse—Marine City

Dr. R. H. Denham—Grand Rapids

Dr. F. T. Andrews—Kalamazoo

Drs. Moll and Chester Holding Over

Council Elections:

Dr. Julius Powers, Chairman—Saginaw

Dr. T. F. Heavenrich, Vice Chairman—Port Huron

Executive Committee of the Council:

Dr. Julius Powers

Dr. T. F. Heavenrich

Dr. C. E. Boys

Dr. Henry Carstens

Dr. H. A. Luce

Dr. J. E. McIntyre

The Council appointed a special "Scouting Committee" to investigate qualifications of applicants and make recommendations for the office of permanent Secretary. This committee is headed by the president of the Society, Dr. Richard R. Smith, and, in addition, includes Dr. H. A. Luce, Dr. C. E. Boys and Dr. B. H. Van Leuven.

THE COMMITTEE ON ECONOMICS

The House adopted with little comment the following resolution:

"The House of Delegates shall postpone action on health insurance, continue the Committee on Medical Economics and shall hold itself ready for special call, if and when, any national or state program of health should appear imminent. Your Committee discourages the further expenditure of funds in this work excepting regular funds of the Michigan State Medical Society, if and when, such funds may be made available by the House of Delegates."

As a part of their final report the Economics Committee released the report of the

Sub-Committee on Post Graduate Medical Education—an exhaustive study of which we shall have more to say in future issues of the JOURNAL.

The House recorded by resolution its appreciation of the many years of service of Doctor Warnshuis and the Council and officers gave expression to the same thought in a tangible way.

See your official minutes for other important actions of the House of Delegates. They will appear in full in the November JOURNAL.

The registered attendance was 968. The quality of the program in the scientific sessions was excellent.

The hospitality of the Calhoun County Medical Society was beyond reproach.

ILLINOIS IS DISTURBED

Our Society has always appreciated and frequently profited from the comments and advice advanced by those who hold office in Sister State societies. Our Society is very appreciative of helpful and guiding advice when it is based on facts and not assumption. In a recent issue the Editor of the *Illinois State Medical Society Journal* has seen fit to make comment upon the attempt that is being made in Michigan to study medical economic conditions in our State. Considerable concern is evidenced in that editorial and condemnation is voiced for the activities of our Economics Committee. It is made to appear that Michigan's profession is casting aside the principles established by American Medicine and is permitting those who are active in social movements to dominate and direct our Society's activities and mould its future. This is far from the truth.

Michigan has always been loyal to the ideals of American Medicine. It has ever conformed to the policies of the American Medical Association and has sought to be a loyal unit of that national body. Michigan will continue to be loyal to the national body and conform to its policies.

Michigan experienced the effects of our national era of depression more severely than did many other states. In 1931 our Society's House of Delegates felt it to be not only necessary but imperative to give

consideration to the economic future of the Society's members. It did so by appointing a special committee to survey the state's medical services and health agencies. In July, 1933, the Committee presented the results of its studies. Certain facts were summarized and certain plans were advanced that might remedy some of the existing conditions, provide medical care for designated groups, relieve the profession from the heavy burdens it was carrying and afford an increase in financial returns to our members for the professional services they were rendering. Plans for the correction of clinic abuses, free service that was being given by health departments and agencies and amendments to state laws were also advanced. To provide opportunity for our members to pursue post graduate work and so be able to render a higher grade of medical care an exhaustive study of post graduate education was made. This latter report has just been released and is, we believe, the most comprehensive study existent on the subject. These findings should be of value to other states and educational institutions.

Our House of Delegates received and considered this 200,000 word report. It discharged the Survey Committee. It created a new Committee on Medical Economics and instructed the Committee to make certain studies and to bring in a plan or plans that would make it possible for people in the lower income earning group to secure adequate medical care from a family doctor. The House of Delegates formulated certain principles and restrictions that must govern and safeguard any plan proposed. The American Medical Association at its 1934 Cleveland session included these fundamentals in the principles it set forth.

In April, 1934, the Economics Committee presented a plan at a special meeting of the House of Delegates. The Committee in its report advanced a proposal that was quite general in its provisions and termed it "A Plan for Mutual Health Services."

The House of Delegates recorded general approval of the plan and instructed its Committee to continue its studies, perfect details and to again report its recommendations to that body. The Committee has been engaged in complying with these instructions and its report was presented at the September, 1934, annual meeting.

The Committee is composed of seven members, located in different parts of the state, who are all in active practice. They have given freely of their time over a period of three years without financial remuneration. The nature of the studies and investigations made as imparted in the several reports required supervision by one who was trained in making sociological investigations and statistical deductions and who could devote considerable time to travel. The Committee sought a Director of Study and eventually nominated Nathan Sinai, Ph.D., of the University of Michigan. The Council of the Society approved the nomination. Doctor Sinai was engaged and has at all times been subject to the instructions and directions of the Committee, the Council and the House of Delegates.

The Society, through its Council, expended some \$14,000 of society funds to finance the survey. The cost of preparing the "Plan" was about \$7,500. This sum was donated to the Society by the Honorable Tracy W. McGregor, a Detroit philanthropist, and was tendered without a single proviso or condition.

Still more funds were required. The Council was authorized by the House of Delegates to seek and receive additional funds from any source or sources, provided that they were given without stipulations, restrictions or requirements for any specific purpose or objective. There should be no attached condition that would change the Society's policies or expressed principles. Several possible sources were approached by a designated member selected by the Council. In due course a proposal was received from the 20th Century Fund whereby this Fund would underwrite the expenses till September 15, 1934. There were no attached conditions or terms. The money was to be received and disbursed by the Council in the same manner as that body receives and disburses all Society funds. To date about \$1,200 has been received from the Twentieth Century Fund.

The foregoing is a summarization of Michigan's Medical Economic activity. Michigan is not subsidized or holden to any outside agencies or Funds. Michigan has not relinquished or sold out its integrity or independence. It is not aligned with any social agency or group. Its employees are subject to the instructions of the House of

Delegates and Council and these employees do not formulate the Society's policies or activities.

Michigan is seeking information, it is studying conditions. It is seeking solutions and is endeavoring to find a remedy or remedies for relieving untoward conditions. It is not pledged to any plan or proposal. Michigan will continue to direct and control its own affairs as the judgment of its House of Delegates perceives the course to be pursued. An additional statement will be found on the editorial page of this issue.

F. C. W.

COUNTY SOCIETIES

EATON COUNTY

The Eaton County Medical Society held its annual picnic at Eaton Rapids on August 30. Fifteen members with their wives and guests were present and enjoyed their supper at Island Park.

In the absence of the president and vice president, the meeting was then called to order by the secretary, who turned the program over to the chairman of the committee, Dr. James Bradley. Dr. Bradley introduced "the orator of the society," Dr. A. G. Sheets. Dr. Sheets presented to the members and their wives the legislative problems now facing the medical profession. Dr. George C. Hafford, member of the Council of The Michigan State Medical Society, was introduced by Dr. Sheets. Dr. Hafford expressed pleasure in being at a meeting at which many of the future members of The Woman's Auxiliary of the Eaton County Medical Society were present.

Following the adjournment of the Society meeting, the Auxiliary held a short business meeting at which many new members joined.

JOHN LAWTHOR, *Secretary-Treasurer*

HILLSDALE COUNTY

The regular meeting of the Hillsdale County Medical Society was held August 14, 1934, at the Hillsdale Country Club, Hillsdale, Michigan, with fifteen members present. The dentists of the county were asked to join in this meeting. Three were present; also four guests, Dr. George B. Darling, Dr. Emory Morris, Dr. G. M. Byington, of Battle Creek, and Dr. E. G. McGavran, Health Officer for Hillsdale County as appointed by the Kellogg Foundation.

After a dinner, the meeting was called to order by the president, Dr. H. F. Mattson. Dr. Darling was then asked to explain the general aims of the Foundation, and did so in a very interesting manner.

The dentists then repaired to a separate room for a meeting led by Dr. Morris.

Dr. Byington spoke to the Medical Society on the Kellogg Foundation Program. He was followed by Dr. E. G. McGavran, who talked briefly on his plans for this year.

Dr. Bower, Hillsdale; Dr. Poppen, Reading, and Dr. Day, Jonesville, were chosen Public Health Committee with power to act.

Dr. McGavran was voted a member of the Society by acclamation.

After some discussion, it was decided that Dr. Poppen, Delegate to the Michigan State Medical Society meeting, to be held in Battle Creek, should go uninstructed as to how to vote on the Health Insurance Plan.

Moved, seconded, and carried, that the society adjourn to meet Tuesday, September 4, 1934, at the Hillsdale Country Club.

D. W. FENTON, *Secretary*.

LIVINGSTON COUNTY

Nine members and twelve guests attended the opening fall meeting of the Livingston County Medical Society, held September 7, 1934.

After a dinner at the State Sanatorium a brief business session was called to order by the president, Dr. Leslie. The minutes of May 4, 1934, meeting were read by the secretary and approved. Several communications from the State Society secretary's office were read and discussed. Among them was a notification of the resignation of Dr. Frederick C. Warnshuis as secretary of the State Society. It was regularly moved and adopted that an expression of esteem for Dr. Warnshuis and regret for his going be sent to him.

Dr. Leslie presented a letter of resignation from the office of secretary-treasurer from Dr. Anderson. This action was accepted, and the president appointed Dr. Hollis L. Sigler, of Howell, to serve as secretary-treasurer pro tem. until the regular December election of officers.

A most enjoyable as well as profitable symposium on "Acute Poliomyelitis" followed the business phase of the evening. The following speakers participated.

C. D. Barrett, M.D., Director Communicable Diseases and Rural Hygiene, State Health Department, Lansing, discussed the epidemiology of the disease with particular reference to the Michigan epidemic of 1931.

R. W. Waggoner, M.D., Associate Professor Neurology, University of Michigan, discussed the medical problems of this important disease.

C. H. Snyder, M.D., of the Department of Orthopedics, University of Michigan, covered the corrective treatment as practiced in his department.

The entire subject was forcibly and most ably presented. We are most grateful to the speakers for a worthwhile evening.

A round table discussion followed.

R. S. ANDERSON, *Secretary-Treasurer*

UPPER PENINSULA ANNUAL MEETING

The thirty-seventh annual meeting of the Upper Peninsula Medical Society was held at Ironwood, Michigan, August 16 and 17, 1934.

Headquarters for exhibits and business and scientific sessions were held at Grand View Hospital. There was ideal convention weather and a large number assembled: Eighty-four doctors registered. A few had friends who did not register and many doctors brought their wives, to the number of thirty-four. There were also about twenty others, the wives of local doctors. In all, we had a sizeable gathering. There were 152 at the evening banquet. Ten different firms had exhibits at the meeting.

The president, Dr. Walch, opened the meeting at 10:15 A. M. Dr. Reynolds, superintendent of Grand View Hospital and secretary of the meeting, made a few welcoming remarks followed by Dr. Maloney, president of the Gogebic County Medical Society

and vice president of the Upper Peninsula Medical Society. Then followed the president's address by Dr. John J. Walch of Escanaba. A scientific paper on "Differential Diagnosis of Common Neurological Conditions Encountered in General Practice" was read by Dr. John L. Garvey of Milwaukee. The doctor presented a number of patients to illustrate his remarks.

The privilege of the floor was then given to Mrs. Guy L. Kiefer of Detroit, chairman of the Woman's Auxiliary of the State Medical Society, who urged the Medical Societies of the Upper Peninsula to organize women's auxiliaries to their medical societies. By a vote of those present, it was adopted that the societies should proceed along the line outlined by Mrs. Kiefer.

The next paper was by Dr. Charles L. Brown, associate professor of internal medicine at Ann Arbor. His subject was "Management of Hypertension." The meeting was then adjourned for lunch, which was served by Grand View Hospital. At this time the president appointed a nominating committee for officers and to select the place of meeting for 1935. The following doctors were appointed: Drs. W. E. Tew, La Bine and Huron.

With the calling of the meeting to order at 2:00 P. M., the nominating committee selected Dr. F. G. Maloney, of Ironwood, president for 1935. A motion was made and seconded that Dr. Maloney be nominated for president. The motion was carried and Dr. Maloney was elected president for 1935. Dr. E. M. Libby of Iron River was nominated for vice president and upon motion duly made, seconded and carried was elected. Iron Mountain was selected as the place for the next meeting.

The scientific program then followed. The subject "X-Ray Diagnosis of Chest Lesions" was presented by Dr. Gage Clement, roentgenologist of St. Luke's Hospital, Duluth, Minn. The second paper, "Indications and Technic of Blood Transfusions," was prepared by John S. Lundy, M.D., and Ralph M. Tovell, M.D., of Mayo Clinic, Rochester, Minn. "Injection Treatment of Hemorrhoids" was discussed by Walter A. Fansler, M.D., Minneapolis. The meeting was adjourned at 4:45 P. M.

The members then proceeded to Koerner's Resort, Spider Lake, Manitowish, Wisconsin, where a social hour was enjoyed before the banquet. The banquet was served at 8:15 P. M. During the banquet, music was furnished by the orchestra. There was considerable general singing and solos by Mr. Sherman, "the singing bandit." Dr. T. R. Rees, chairman of the Entertainment Committee, fittingly introduced the toastmaster of the evening, Dr. Louis J. Hirschman of Detroit. Dr. Hirschman, as usual, made an excellent toastmaster. After his introductory remarks and stories, he called upon the first speaker of the evening, Dr. George L. Le Fevre, president of the Michigan State Medical Society, of Muskegon. The doctor outlined some of the work accomplished by the State Society during the past year and suggested work that should be accomplished the coming year.

The toastmaster then introduced members of the State Board of Registration, who were present: Drs. Tew and Walch, Dr. Harkness, president of the Michigan Council of Health, also Drs. Curry and Lyons. Dr. H. E. Perry, councilor of the 12th district, gave a résumé of the state medical legislation during the past year. Mrs. R. I. C. Prout of Wakefield, ex-president of the Michigan State Federation of Women's Clubs, gave a reading, "The Doctor's Wife," which was enthusiastically received. Dr. Yeoman, chairman of the State Board of Registration, gave a talk on the duties and functions of the Board. The next in order was a talk by our State Commissioner of Health, Dr. C. C. Slemmons.

The meeting adjourned at a late hour and most of the guests returned to Ironwood.

The following morning the meeting was called to order by our vice president, Dr. Maloney. The following papers were read:

"Sinus Infection—Diagnosis and Treatment"—Bert E. Hempstead, M.D., Mayo Clinic, Rochester.
 "Allergy in General Medicine"—Charles L. Brown, M.D., Associate Professor of Internal Medicine, Ann Arbor.

"Technic of Nerve Blocking for Various Orthopedic Operations"—John S. Lundy, M.D., and Ralph M. Tovell, M.D., Mayo Clinic, Rochester.

The final adjournment was at 12:30 P. M.

At 2:00 P. M. a golf tournament was held at the Gogebic Country Club, Dr. Aldridge of Houghton running off with honors and the cup.

The program for visiting ladies met with favorable response. The first day's noon luncheon at the St. James Hotel was attended by some forty-five or fifty ladies, and was followed by a theater party. The following morning an 11:00 o'clock breakfast was served at Little Girls Point, Lake Superior, at the cottage of Dr. T. R. Rees, after which bridge was played.

The officers of the Society wish to thank the various committees, those on the program and Grand View Hospital for making this a very delightful and instructive meeting.

FRANK L. S. REYNOLDS, M.D., *Secretary.*

Officers: Dr. John J. Walch, president; Dr. Frank G. H. Maloney, vice president; Dr. Frank L. S. Reynolds, secretary.

Program Committee: Dr. W. E. Tew and Dr. A. J. O'Brien.

Entertainment Committee: Drs. T. R. Rees, C. E. Stevens and H. A. Pinkerton.

Ladies Entertainment Committee: Mrs. A. J. O'Brien, Chairman; Mrs. C. E. Stevens, Mrs. R. I. C. Prout, Mrs. T. R. Rees, Mrs. Frank L. S. Reynolds.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

EATON COUNTY

On July 2, 1934, the doctors' wives of Eaton County met at the home of Mrs. C. A. Stimson and a new Auxiliary was organized. Much enthusiasm was shown and a fine organization is anticipated.

The following officers were elected: President, Mrs. Bert Van Ark, Eaton Rapids; vice president, Mrs. C. A. Stimson, Eaton Rapids; secretary, Mrs. K. A. Anderson, Charlotte; treasurer, Mrs. Phil Quick, Olivet.

We are very glad indeed to welcome this new county unit.

Other county auxiliaries which have elected new officers are as follows:

Calhoun: President, Mrs. A. M. Giddings; vice president, Mrs. William Dugans; secretary, Mrs. Kenneth Lowe; treasurer, Mrs. B. G. Bolton.

Jackson: President, Mrs. Glen Hicks; vice president, Mrs. M. N. Stewart; secretary, Mrs. Frank Van Schoick; treasurer, Mrs. Randall Cooley.

Ottawa: President, Mrs. Otto Vander Velde; first vice president, Mrs. William Westrate; second vice president, Mrs. Ralph Ten Have; secretary and treasurer, Mrs. Kenneth Wells.

WAYNE COUNTY

On June 5, 1934, the Auxiliary to the Wayne County Medical Society were guests, for their annual picnic, at the country estate of Dr. and Mrs. Alexander W. Blain. It was an ideal day for the thirty mile drive that preceded the arrival at Blain Island in Maceday Lake. After a cordial welcome, Dr. and Mrs. Blain conducted their guests on a tour of the island to see the many animals—bears, deer, monkeys, swans, ducks, parrots and rare birds and animals which they have provided with permanent homes.

At noon, everyone gathered in the spacious living room of the picturesque log cabin for their picnic lunch and listened to tales of the many trophies about the room. Later some of the members donned bathing suits and enjoyed a swim and many thrills on the slides at the bathing beach while others rested comfortably in the summer house over the water, visited and enjoyed the lovely view and cool breezes.

The Auxiliary extends to Dr. and Mrs. Blain sincere thanks for their gracious hospitality and for the delightful outing which will linger long in the memory of the members.

The long anticipated visit to Fairlane, the Henry Ford estate at Dearborn, by the Woman's Auxiliary to the Wayne County Medical Society far surpassed all expectations. Two groups of members, their "private physicians," and friends made the trip, in June. They left the Wayne County Medical Club House at 10:00 a. m. and 12:00 Noon; and, through the courtesy of the Ford Motor Company and the Detroit Police Department, were transported in a fleet of new Ford cars and escorted by policemen on motorcycles. The ride out and back took practically no time and was the most thrilling part of the day, as red lights were passed unheeded at an unusual rate of speed while wide-eyed and gaping crowds lined the curbs attracted by the police sirens to "watch the Fords go by."

The morning group visited Greenfield Village with its most interesting museum; Menlo Park, memorial to Thomas Edison; Ford Memorial Church, where one listened reverently to the playing of a hymn on the melodious organ; and the English shepherds' cot, with its quaintly beautiful garden. Transportation through the village by horse drawn vehicles was in direct contrast to the modern rapid transportation just experienced.

The noon group joined the others at luncheon at The Dearborn Inn. Rev. Francis B. Creamer of Christ Church Chapel at Grosse Pointe, said grace. Mrs. Frank W. Hartman, president of the Auxiliary, welcomed the guests and made announcements of coming events in the Auxiliary. During the meal delightful music was furnished by the Dearborn Inn Trio.

After a delicious luncheon came the visit to the rose garden at Fairlane. Mr. and Mrs. Ford were most hospitable in allowing the gathering to alight at their home and wander at will through the spacious wooded grounds of their estate. Many bird houses, baths, and feeding shelters bore witness to the Ford love of birds. The widespread trees provided welcome shade during the walk to the garden. In no place in the world can one view more roses, or a larger variety, than at Fairlane. The garden is bounded at either end by screened garden houses where a sheltered view of the flowers may be enjoyed. This vast vista of fragrant bloom is bordered on two sides by trees, and through the center flows a little rippling stream which empties into a pool filled with mammoth goldfish.

Those who wandered down by the dam viewed

the boat houses containing many kinds of craft, and some of the guests saw the swimming pool in a wing of the house. The view from this point included a beautiful formal English garden with a summer house at the far end.

The hours passed rapidly, and four-thirty, the time to start for home, came only too soon. Everyone felt a debt of gratitude to Mr. and Mrs. Ford for their generous hospitality and the day will be long remembered by those who were privileged to go. To Mrs. Frank W. Hartman, president of the Auxiliary, whose careful planning and direction made this perfect day possible, we express our appreciation.

(MRS. CLIFFORD) LORRAINE E. LORANGER.

OBITUARY

Dr. Henry Graham Bartlett

Dr. Henry Graham Bartlett of Benton Harbor died at his home on Aug. 22, in his 65th year. He had practised in Berrien County for thirty years. Dr. Bartlett graduated from the Detroit Homeopathic Medical College in 1896. After six years' practice at Broda he began to limit his work to eye, ear, nose and throat and had offices at St. Joseph's, Michigan, where he carried on his practice until February, 1931. He then moved to Benton Harbor, where he carried on his practice up to his last illness. He was at one time City Health Officer of Benton Harbor, during which term he rendered valuable service, particularly in getting through some of the first ordinances on milk as well as sanitation and welfare. Dr. Bartlett is survived by his widow; a daughter, Mrs. Thomas Quiery of Milwaukee; two sons, Lieut. W. H. Bartlett of West Point, N. Y., and Dr. Walter M. Bartlett of Greenwich, Conn.

Dr. John E. Clark

Dr. John E. Clark of Detroit died at his home September 19, 1934, at the advanced age of eighty-four years. He was born in London, England, in 1850 and came to Canada, where he received his early education in the high school and at Victoria College. He studied medicine at the University of Michigan Medical School, where he was graduated in 1877. He began practice in Detroit the same year and continued in practice there until his last illness, which was only four days' duration. Along with his practice Dr. Clark had been Wayne County Chemist since 1898. He was for forty years dean of the department of pharmacy and professor of chemistry and toxicology of the Detroit College of Medicine. He retired from his teaching position in 1932. Dr. Clark took a keen interest in civic affairs and was a member and former president of both the Board of Education and the Public Library Commission. He was especially active in the organization of the Detroit Teachers' Retirement Fund. Dr. Clark was a member of the Wayne County Medical Society; the Michigan State Medical and American Medical Associations. On him was conferred the honorary degree of Doctor of Science by Wayne University. He is survived by one son, Dr. Harold E. Clark; a daughter, Mrs. Keller; and a brother, Dr. George E. Clark, all of Detroit.

GENERAL NEWS AND ANNOUNCEMENTS

The minutes of the annual meeting will be published in the November issue.

The Grand Rapids Clinic has dissolved. The building will be operated by the Blodgett Hospital for doctors' offices.

Dr. A. R. Hufford, Grand Rapids, has been appointed Medical Examiner for the Aeronautics Division of the Department of Commerce.

Dr. F. Menees and Dr. J. D. Miller of Grand Rapids received honorable mention for their Scientific Exhibit at the Cleveland A. M. A. meeting.

Dr. A. B. Toaz and Dr. A. O. Brown of Detroit left September 12 for Europe where they will visit the important medical centers for post-graduate work.

The many friends of Dr. and Mrs. Robert G. Owen of Detroit sympathize with them in the death of their son, Robert G. Owen, Jr., aged twenty years. Dr. Owen, the father, is director of the Owen Clinical Laboratory, Detroit.

The annual conference of secretaries of constituent state medical associations met at the Palmer House, Chicago, September 21 and 22. Dr. Richard R. Smith, president of the Michigan State Medical Society, and Dr. Burton R. Corbus attended the convention.

A member of the Michigan State Medical Society reading the editorial on "Old Age Pensions for Physicians" which appeared in the August number of this JOURNAL writes: "I would like to see the old age pension for physicians in force, as many older men have lost most of their life savings by the depression, myself included, and must continue to practice as long as possible."

Dr. John E. Handy was a guest of honor at the Caro Rotary Club on Monday, August 27, an occasion which was further graced by the presence of his old friend and practitioner, Dr. Sample of Saginaw. Dr. Handy was presented with a certificate of honorary membership in the Caro Rotary Club. In conclusion Dr. Handy in a well worded address expressed his gratitude for the demonstration in his honor.

Early in the summer a circus made its annual visit to Detroit. The physician of this particular circus had been for years a friend of the late Dr. Neal Hoskins. Knowing that Dr. Hoskins had passed away the group on arriving at Detroit with a number of sick performers, got in touch with the late Dr. Hoskins' office, now occupied by Dr. W. J. Stapleton. Dr. Stapleton made a visit to the circus and immediately hospitalized a number in whom he diagnosed typhoid fever, which of recent years has become a rare disease in Detroit. The cases were of course immediately reported to the Board of Health, who at once cancelled the licenses of all concessionaires, inspected the methods of handling food

and methods of sewage disposal. A general examination and taking of temperatures took place. Approximately seventy persons were eventually hospitalized. A number of the cases were serious, resulting in seven deaths. Fortunately the prompt apprehension of the condition has resulted in no further spread of the infection nor inclusion of any citizens of Detroit.

The Surgical Staff of Butterworth Hospital tendered a farewell plantation dinner to Dr. F. C. Warnshuis on September 1 and presented him with a pen and pencil set. On September 6 at a meeting of the Kent County Medical Society Dr. Warnshuis was given a farewell ovation and was presented with a traveling radio set. Dr. and Mrs. Warnshuis left Grand Rapids September 15 for his new duties in California. His address is Suite 2004, 450 Sutter Street, San Francisco, Calif.

The following officers were elected for the year 1934-1935 by the Section on Dermatology and Syphilology at the Michigan State Medical Society meeting held in Battle Creek, September 11, 12 and 13, 1934: Chairman, Dr. A. R. Woodburn, Grand Rapids; Secretary, Dr. G. Warren Hyde, Detroit.

The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. Members of the medical profession are cordially invited to attend. Further information may be obtained by addressing the Secretary-Treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

MEDICAL EDUCATION IN MICHIGAN

The *Journal of the American Medical Association* for August 25, 1934, contained the following information regarding the medical schools of this state.

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL. Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. Coeducational since 1870. It has a faculty of 26 professors, 13 associate professors, 28 assistant professors, 152 assistants, instructors and lecturers; a total of 219. The entrance requirement are ninety semester hours. The curriculum covers four years of nine months each. The total fees for Michigan students are \$200, \$205, \$205 and \$202 for each of the four years, respectively, plus a matriculation fee of \$10; for nonresidents, \$100 a year additional. The matriculation fee for nonresidents is \$25. The total registration for 1933-1934 was 451; graduates, 98. The eighty-fifth session begins Sept. 24, 1934, and ends June 17, 1935. The Dean is F. G. Novy, M.D.

WAYNE UNIVERSITY COLLEGE OF MEDICINE, 1516 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with the title of Detroit College of Medicine and Surgery in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. In 1934 the name was changed by the action of the Detroit Board of Education to Wayne University College of Medicine, as a part of the program of consolidation of the Detroit City Colleges into a university system. Coeducational since 1917. Entrance requirement is an academic degree or 90 semester hours of academic credit with "combined

degree" guaranteed by school of arts and sciences. The faculty consists of 33 professors, 101 lecturers and others, a total of 134. The course covers four years of nine months each and a fifth hospital intern year. The total fees for each of the first four years are, for Detroit residents, \$283; for nonresidents who reside in Michigan, \$383, and for nonresidents from outside the state, \$408. For the fifth or intern year the resident student fee is \$50; the nonresident fee is \$85. The total registration for 1933-34 was 324; graduates, 66. The fiftieth session begins Sept. 27, 1934, and ends June 21, 1935. The Dean is W. H. McCracken, M.D.

TYPHOID FEVER IN DETROIT

First Eight Months of 1934

There has been more typhoid fever in Detroit during the first eight months of 1934 than has been experienced for some time. The incidence has been as follows:

January, 1; February, 2; March, 1; April, none; May, 3; June, 2; July, fifteen residents and forty-nine employees of a circus; and August, 12.

Two typhoid carriers have been found, two patients received their infection from carriers, five received their infection from drinking infected water, one while bathing in water known to be infected, and five received their infection while caring for cases of typhoid fever. The source of infection of eight is not definitely known, while the source of infection of twelve is definitely known to have been outside of Detroit. Also the circus employees, of course, received their infection outside of Detroit. The remainder are being investigated as to their sources of infection.

The most spectacular event was the finding of forty-nine cases of typhoid fever among 1,450 employees of a circus visiting Detroit on July 22 to 24. Seventy-seven employees were removed during the second and third days and forty-nine of these were found to be infected. Many of these employees were working in food concessions. These were closed as soon as this fact was discovered. It is of interest to note that no secondary cases have been traced to this circus as a source of infection up to September 10.

The staff at Harper Hospital offered their services and a special ward for the care of these cases and suspected cases of typhoid fever. Seventy employees of the circus were left in the hospital. The Health Department loaned the services of Dr. Don W. Gudakunst to accompany the circus while it remained in the state. From Detroit the circus went to Flint, where the medical personnel found 7 more suspected cases among the employees. These were sent back to Harper Hospital. From Flint the circus went to Lansing, where five more employees were hospitalized in Lansing. The following day the circus went to Kalamazoo and three employees were sent to the Sparrow Hospital at Lansing.

As soon as it became apparent in Detroit that a number of cases of typhoid fever were present, the State Department of Health was notified and a representative was detailed. The State Department of Health notified the U. S. Public Health Service and a physician and an engineer were detailed to investigate and take such methods as was deemed necessary to protect the public.

A few cases had developed before the circus arrived in Detroit. Three had been left in Cincinnati and one in Dayton. The primary source of infection has not yet been determined.

DETROIT DEPARTMENT OF HEALTH